The Review of Metaphysics

A PHILOSOPHICAL QUARTERLY

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E[illegible] PAUL WEISS

M[illegible]r: V. C. CHAPPELL.

A[illegible] Calfee, Milton [illegible], Roger Hancock, [illegible], Chaninah Maria[illegible]ngi, Robert Peterson.

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ARTICLES

SOME EMPTY THOUGH IMPORTANT TRUTHS

CHARLES HARTSHORNE

"Science," defined as inductive study of facts, can scarcely be coextensive with knowledge; mathematics, for instance, is not inductive.[1] The very principle of induction itself is not obviously a product of induction: at any rate, there is an appearance of circularity in trying to establish it inductively. Speaking vaguely, we may perhaps say that knowledge of the *concrete*, or of *facts*, is inductive; while knowledge of the *abstract principles* of knowledge, or at least, of the *most abstract* principles, is non-inductive. The prevailing view today seems to be that such non-inductive knowledge is "analytic," "tautologous," or "empty," in that it merely elucidates the import of certain terms occurring in our language. Truths of this empty sort exclude nothing, except nonsense. "Two and two are four" seems to exclude that they are five, or some number other than four, but since, for example, "two and two are five" distorts what we wish to mean by the terms employed, in rejecting it we exclude only a misuse of terms. By contrast, "there are no more than a million men living" excludes "there are more than a million men living," and the one statement is as meaningful and consistent as the other. Factual truth, I believe, is always thus exclusive of meaningful alternatives. It may seem odd to insert an "I believe" here: for do not all philosophers so believe, except perhaps Spinoza and some absolute idealists, who deny the contingency of existence altogether? ("Contingent" here means exclusive of meaningful alternatives.)

Yet this widespread agreement as to the contingency of fact conceals an important possibility of disagreement. For there is a common assumption by which the doctrine of the exclusiveness of factual truths is trivialized. This is the assumption that the excluded alternative can be merely negative. Thus: there are

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[1] This paper was read as the Presidential Address at the sixth annual meeting of Metaphysical Society of America, Chicago, March 25th, 1955.

elephants, there might have been no elephants; there is a world, there might have been no world. What the positive fact necessarily excludes, then, is only a privation: in short it may exclude literally *nothing*. But to exclude nothing is not really, I suggest, to exclude. Real transactions are not concerned with non-entity, and exclusion is in some sense a real transaction. If I am just here, I prevent you from being here. If elephants exist, then, in certain portions of the world at a given moment, other large animals cannot exist, for the space they might occupy is otherwise occupied. The non-being of wild elephants in North America is a partly *positive* fact, for it means (for one thing) that every portion of the land surface of that continent (outside of "zoos") is covered either by some solid object different from an elephant, or by empty air.

We have arrived at the oft-debated question of negative facts.[2] The partisans of negative facts soundly argue that every positive fact entails negative ones. If X is round, then X is not square. But is it less true that every negative fact entails positive ones? If X is not square, then it has some other shape or character. Negative aspects of fact are one thing, exclusively negative facts would be another.

An example of an allegedly *purely* negative fact is this, "there was not a sound," or "he heard nothing." Is the datum of such a perception simply the absence of sound? Surely we must distinguish between, "he heard nothing," i.e., he observed the fact of silence, and "he did not hear," for example, because he was asleep or unconscious. (And is not sleep itself somehow a positive state?) The perception of silence seems to involve positive characters both in the situation and in the subject's experience. The air particles are arranged otherwise than in the wave patterns which can cause sensations of sound, and the subject's non-auditory experiences have a kind of intensity and coherence which would be somehow disrupted were there the distraction of perceivable sounds. When we detect the absence of food in the ice box,

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[2] See, e.g., Richard Taylor, "Ayer's Analysis of Negation," in *Philosophical Studies*, 4 (1953), 49-55, and my comment in *The Philosophical Review*, 63 (1954), p. 488, n. 5.

we do not detect the presence of nothing there: the absence of food is implied by positive factors, such as the presence of light waves reflected from the back of the refrigerator at nearly every point. And the absence of food implies that other solid objects than nutrient ones occupy all the space not occupied by air, or by forms of radiant energy.

But could not the absence of food be a wholly negative fact if it were included in the great negation, "no world, no positive facts, at all"? However, can we really think anything corresponding to such a pure negation? Obviously no conceivable verification of this or any statement could occur, on the supposition that nothing at all occurred. Is it not absurd to pretend to conceive a "possibility" whose actualization must thus in principle be entirely beyond experience or confirmation? But perhaps the meaning of "no world at all" is, "God knowing he has not created any world"? This assumes that "God knowing nothing positive other than himself" represents a meaningful idea, which I doubt; but in addition, it does not get rid of the contingent positive side inherent in all fact. For God-knowing-that-he-has-not-created is God knowing something which it is not necessary to his nature to know, namely the fact of non-creation. (For the assumption is that he *might* have created, and then there would have been no fact of non-creation to know.) Thus the non-being of the world is still the being of some positive contingent fact—at least the fact that God has this negative fact to know. If you deny this, you make the possible non-being of the world something in principle beyond all experience or knowledge, and so, I should think, meaningless.

If, then, any possible fact is partly positive, it follows, as I shall now show, that there are two sorts of empty truth, only one of which is "merely linguistic," and in that sense empty. "Two apples and two apples are four apples" does not tell us that there are any apples; indeed, it tells us nothing positive, but merely denies that any state of affairs can illustrate two pairs of apples making other than four apples. Modern logic takes universal statements in this negative sense. "All A is B" becomes "There are (or perhaps even, there can be) no A's which are not B," or "A—B = 0."

Let us take a step closer, at least, to an a priori truth which is

not in this fashion essentially negative. "Two and two are four" cannot be falsified in any possible state of fact; but further, unlike "two apples and two apples are four apples," it could not even fail of positive exemplification, unless in a very odd world or state of fact indeed, namely one so lacking in distinct items that the number four, or the idea of pairs, would have no application to it. It is perhaps dubious if such a state is conceivable. Still less readily conceivable (if possible) is a world totally lacking in order, an existing pure chaos. Of course, we can take the impossibility of this as a mere tautology, in that the word "world" connotes an existing order. But it remains to ask what, if anything, we can really think corresponding to the sentence, "No world, no real order, exists." Is this an absolutely unconfirmable proposition? Does not the possibility of confirmation imply an order of some sort?

What we thus come to is the idea of analytic truths which are positive. Not only can fact not contradict them, but it must illustrate them. If, then, they are called "empty," we should beware of a radical ambiguity in this term. *All* empty truths are such that nothing can illustrate them negatively (for they exclude only nonsense), but some empty truths (which we may call metaphysical) are such that they are bound to be illustrated positively. How can we recognize truths of this character? The test is whether or not positive illustration of the proposition would exclude anything positive. If, for example, the idea of a world so fluid or continuous that it totally prevents counting of items is really a positive idea, then "two and two are four" is only negatively a priori, in the sense in which "two apples and two apples are four apples" is only negatively a priori. But if, on the other hand, there is nothing positive in such complete "fluidity" (I do not here try to decide this), then arithmetical truth is positively and unconditionally a priori. But the difficulty of deciding as to the positive meaning, or lack of it, of pure "fluidity" warns us that the criterion of positive or metaphysical a priori truth, namely, "can be positive without excluding anything positive," may be incapable of clear and certain application by our cognitive powers. Yet metaphysical truth cannot be unknowable in any absolute sense. For what is common to all possible worlds

is included in the actual one, and in any meaningful conception. It is but a matter of abstraction and analysis to find it there.

Ernest Nagel, in his essay, "Logic without Ontology," [3] tries to prove that there need be nothing common to all possible worlds corresponding to logical laws—for instance, to the law of non-contradiction. He seems to me to miss the point, almost "as if by magic." Of course, there is no *fact* common to all possible worlds. But any possible world will actualize some possibilities and thereby exclude the actualization of certain other possibilities. This means, among other things, that in any world choices will have to be made by which some values are achieved and others are renounced. "We cannot eat our cake and have it too" is a maxim with some valid application in no matter what sphere. This is, if you will, an element of tragedy inherent in all existence. As Goethe said, "Entsagen sollst du, sollst entsagen," (renounce, thou shalt renounce). Things (and good things) are possible disjunctively which are not possible conjunctively; there are incompossible possibilities. This is a principle not merely of language or of true belief, but of action also. It expresses the nature of existence itself as a process of exclusive actualization.

Metaphysics we may now define as the search for necessary and categorical truth—necessary in that, unlike empirical truths or facts, it excludes no positive possibility, and thus imposes no restriction upon the process of actualization, and categorical in that (unlike mathematics interpreted as deduction from unasserted postulates) it applies positively to *any* actuality. It will be noticed that the principle of factual exclusiveness is itself non-restrictive, as well as positive; for, as we have seen, there cannot fail to be positive actualization of some possibility, exclusive of other possibilities.

Metaphysical truths may also be described as such that no experience can contradict them, but also such that any experience must illustrate them. Let us take this as an example: "The present is always influenced by the past." Could any experience conflict with this? We surely cannot know that we are uninfluenced by the past, for to know the past is, in one's state of knowledge, to

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[3] In *Naturalism and the Human Spirit* (New York, 1944), 210-41.

be influenced by it. By the past, we *mean* something which influences the present, and one might very well define "fact" as whatever influences events subsequent to a given date.

What is the use of a metaphysical formula such as: "Every event is influenced by its predecessor"? It is certainly not a prediction in the normal sense. If an expert predicts that the recent unusual weather is going to make for a small wheat crop, astute farmers, politicians, and bankers will take this into account in their plans. They will act in some respects as they would not act if the prediction were for a large crop. But if the metaphysician "predicts" that the future is going to be influenced by what is now going on, people will say, "Of course, but what of it," and turn to their affairs; while if the metaphysician says that the future will be in no way influenced by what is now going on, they will stare at him to see if he be mad, and again turn to their affairs. No practical consequence (except as to his sanity) will be drawn in either case that would otherwise not be drawn, for no matter what anyone says we always expect the future to be influenced by what is now going on. Every animal qualifies its striving with respect to the future by what it is experiencing now. It needs no metaphysician to tell it to do this. Thus if metaphysics has a function, it must be very different from that of science and technology.

What then is this function? The answer, as I see it, has several aspects.

(1) Is it not conceivable that an affirmation which cannot be falsified, or reasonably denied, and is thus perfectly "truistic," may yet be worth making simply to *remind* ourselves of something which is satisfying to contemplate, and not less so because it must always be there, and we have only to think about it to enjoy its value? Take the saying, "Life has a meaning," or "There are real values," or "Some ways of thinking and acting are better than others." In no case can these affirmations rightfully be denied, for if life itself is never worthwhile, then neither is the denial of life's worthwhileness ever worthwhile, since this denial itself is a piece of life, an act of a living being. And to say that no way of thinking is better than any other is to say that the way of thinking thus expressed is no better than the contradictory way,

and such a manner of talking nullifies itself. But yet the saying, "there are real cases of better and worse," may be significant as a *reminder* that the power to make comparisons of value is a power with a significant use, a power which we share with all men, and in a way with all sentient beings, at least. There is something satisfying in this reminder, something, shall we say, at least slightly inspiring. Now I hold that all metaphysical truisms have this inspiring character. Here is the argument.

Contemplation, like every life-function, must always achieve some value. But with matters of fact, part of the value may be the realization that what has occurred could, and should, have been prevented. This realization has positive pragmatic value. In matters of fact, there are reasons for being "realistic," for facing things as they are no matter how much we may wish they were otherwise. But in truths that *could* not have been otherwise, necessary truths, it means nothing to say, "Oh that they had been otherwise"! Therefore it means nothing to say that they are evil. There is, to be sure, an aesthetic value in the recognition of evil; for certain contingent beautiful qualities, such as heroic courage or sacrificial love, include elements of evil. But the aesthetic value is achieved only if evil retains its meaning as that which, in each particular case, should have been, and could have been, unrealized. Now it might appear that good must similarly be defined as that which ought to be, or to have been, realized, and this appears to imply that its non-realization was not impossible. Of concrete goods, properly correlative to concrete evils, this is quite correct. Both are contingent in the same sense. But there is this difference between the ideas of good and of evil, that whereas the contemplation of good things is itself a good thing and in so far needs no further justification, the contemplation of evil things is itself, at least in part, an evil, and hence is in need of further justification. With contingent evils, such justification can be given, with necessary evils it could not be. Either, then, they *could* not be contemplated, which implies that reference to them is nonsensical, or they must be intrinsically rewarding to contemplate, and since contemplation is the only possible act in regard to the necessary, they are then by definition good in whatever sense they could be either good or evil. Necessary goods

are not indeed good in the sense that they could be positive goals of practical volition; but the act of thinking about them can nevertheless be voluntary, and its motive must be positive, that of enjoyment of something satisfying to contemplate. Contemplation need not be a wish to alter—indeed, as contemplation it must not be; and clearly the past, as object of contemplation, is beyond alteration. But yet to recognize the past as evil is to view it as that whose avoidance was desirable and has not always been impossible.

The argument, then, is: knowledge must have either pragmatic or aesthetic value; the necessary is not subject to pragmatic evaluation, and its aesthetic evaluation can only be positive. If this is correct, then metaphysics discloses aspects of reality that can be enjoyed but cannot, unless by confusion and selfmisunderstanding, be found ugly or objectionable. Metaphysical truth is in some fashion a *realm of beauty unsullied by any hint of ugliness.* The beauty may be thin, something like that of mathematical ideas, wholly lacking in sensuous richness or concreteness, but in its way it is real. All acts of attention must achieve some sort of value, and the only value a necessary entity can provide is that of sheer contemplation of an object which is satisfying simply as object, as something contemplated. This is the most general definition of beauty. Metaphysics seeks "intellectual beauty" in the purest sense of this phrase. Can any inquiry be illegitimate if it discloses such beauty?

Moreover, is it not possible that when something like the totality of truistic affirmations has been made explicit, or when all or most aspects of the necessary element in reality have been disclosed, the mildly satisfying or beautiful character of these aspects, taken singly, will be greatly enhanced by the interrelations which will then appear among them? The *total* truistic picture, as it were, may be much more exciting or beautiful than elements of it isolated by abstraction.

(2) Although the denial of truistic affirmations is not meaningful, nevertheless through confusion, people often indulge in such denials. And there is no sharp line to be drawn between destructive emotions of despair and the utterance of absurdities like, "Nothing matters," or "Life is a tale told by an idiot, sig-

nifying nothing." Hence it may be worth pointing out that the denials of these cries of despair are truistically true.

(3) To be vividly conscious of the full truistic meaning or value of existence as such is to have a better chance of noting well and steadily the non-truistic or contingent meanings or values. For despair is deadening; lack of hope leads to neglect of opportunities; also, a onesided, deficient consciousness of what all life essentially is tends to induce onesidedness in the observation of the particular values of particular experiences. Thus if a man takes it as a truism that every creature must, or even can, be actuated by sheer self-interest, then he will tend more or less systematically to inhibit other-regarding motivations (which inevitably will be present in fact, since the correct truism is that every creature is social, "self-interest" being possible merely as a special, sometimes morbidly emphasized, form of sociality, a sympathetic interest in past or future states in the same personal series). Thus a principle which in its literal absoluteness could not possibly be applicable, may become, relatively speaking, only too true by virtue of being supposed absolute. To determine what self-regarding, and what other-regarding, motives are actually present is a factual task; but the task is the better performed by one who realizes that the zero value of either sort of motivation is a mere limit of thought. He will not have to waste his energy on such pseudo-factual statements as that all motivation is entirely selfish (if it were, we could not even converse, for all language implies some participation in the interests of others).

(4) An aspect of the foregoing is this: metaphysical truisms, though not factual, may nevertheless include the principle that there must be some contingent facts or other on a level above that of ordinary, imperfect experiences such as ours. I have sought elsewhere to show that a kind of perfection is conceivable which *inevitably* or infallibly actualizes itself in appropriate contingent states of consciousness.[4] Each particular such state, being con-

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[4] In my *The Divine Relativity* (New Haven, 1948), pp. 19-22, 41-42, 80, 87, 89, 157 f; and in Charles Hartshorne and William Reese's *Philosophers Speak of God* (Chicago, 1953), pp. 10-11, 404, 504-08; also my *Reality as Social Process* (Boston, 1953), pp. 114 fn., 169 f., 204-06.

tingent, can be known only by empirical intuition, and it must be known as matter of fact, i.e., as something to which there were meaningful alternatives. But it does not follow that to the *non-emptiness of the class* of perfect states of consciousness there was any meaningful alternative. The principle here is akin to that expressed in the formula, "That accidents happen, some accidents or other, is not itself an accident, but is necessary, inevitable." Similarly, that the Perfect should be embodied in some accidental state or other may be necessary, and this necessity may be metaphysically knowable. Such knowledge will encourage us to consider what light our factual experiences can shed upon the question, Which among possible accidental states of the perfect nature is in fact actual? No doubt we can never know clearly anything remotely like the full answer to this question, for to do so would amount to achieving perfect consciousness ourselves. But some very limited approach in the right direction may yet be possible, and the more so if our metaphysics has told us that there is such a direction to look for.

The full significance of the foregoing four points is realized only when they are considered in connection with religious experience and doctrine. But have we not given a fair answer to the charge that metaphysical statements, since they predict nothing specific, are useless or not cognitively meaningful? To know what is common to all possible experience and existence is still to know something, though not something factual; and this knowledge may be valuable, first because its object is intrinsically satisfying or beautiful; second because it is sometimes, even if nonsensically, denied; third because it furnishes a clue or ideal standard relevant to all experiences, regardless of their specific content; and fourth because it may tell us that there is an exalted kind of factual reality which we can but dimly glimpse in its contingent particular content, but can nevertheless have reason to believe is there in its all-surpassing and all-enfolding majesty.

The positivistic objections to metaphysics apparently assume that there is no common factor, at least none worth becoming conscious of, in the alternative possibilities of existence; that we can be aware only of facts, on the one side, and of our language or of *arbitrary* ideals, on the other. Is it self-evident that no com-

mon ideal or meaning or character pervades all possible thought and experience? I suspect that one reason anti-metaphysicians take this stand is that metaphysics has so seldom (especially of late) been clearly stated in its non-factual or non-restrictive character. It has frequently been presented as a superior level of fact. As was suggested above, a superior level of fact may indeed have to be recognized, but metaphysics by itself can know of such superior facts only that there must be such, not what *in particular* they are. If it be asked, of what use is it to speak thus of things which cannot be humanly known, part of the answer is that it may be good for us to realize that we are not even potentially omniscient; and also, that something of the higher level of factual truth, which is inaccessible to metaphysics, may be known by particular experiences, especially if we realize that there must be something of the sort to know, and are thus led to attend to the profounder aspects of experience in a more conscious and coherent way than we might otherwise do.

The metaphysical as such remains wholly truistic or non-factual; and yet, somewhat as "Two plus two equals four" turns out to be a portion of a beautiful and endlessly useful theory of numbers, so the total truistic consciousness turns out to be the contemplation of something satisfying on its own account, and also inexhaustible in its relevancies to possible experiences. People do not ask the theory of numbers to make predictions as to facts, or to tell them how to act. Nevertheless, predictions and consciously directed actions will make use of numerical aspects of things, and the study of number theory is a good in itself. Beauty is its own excuse for being, and purely truistic beauty, the beauty of what could not have been otherwise, needs no *particular* action to express its relevance, for this relevance is found in a general inspiration for all action, a heightened consciousness of the universal Ideal or Meaning, an improvement in the basic principle of action, a higher level of zest and whole-heartedness, less dependent upon encouraging circumstances, in *anything* that is done. Is this solely an emotive affair, or one only for poets, musicians, psychiatrists, or preachers? These too face the same problem. They too may need a vision of the eternal ideal, the absolute truistic value, of which all special purposes and goods can be seen as special cases.

Is it wholly foolish for an artist to reflect upon the principle, Unity in Variety, merely because this principle in its full generality is sheer truism, since *any* experience and *any* object must be somehow unified and somehow contain variety? It remains possible that by special means special degrees or levels of harmony in diversity can be attained, and all the better by one who understands that in a sufficiently dilute sense anything is beautiful. Again, is it necessarily foolish to remind oneself that one should always do the best one can in the situation one is in? Yet to deny this is absurd or meaningless.

The mark of a metaphysical truism is its total lack of particularity. The statement, "something exists," for example, is a totally non-particularized existential statement. Of course, it asserts that there *is* something particular, but it is one thing to say that particularity has an instance, and another to say *what* instance. The allegedly possible contradictory fact, "there are no particulars," would be entirely non-particular, and being thus unrestrictive or unselective, it could only be a necessary or essential truth. But this is absurd, since it would make existence impossible! The alternative, "something exists," is therefore necessarily true.

There is another existential statement which is wholly non-selective among positive particular possibilities, although there seems to be almost a conspiracy to prevent this from being realized. This is the statement, "There is a being with divine attributes—for example, the attribute of infallible, fully clear, certain, and adequate knowledge." Does this statement exclude any conceivable positive fact? It excludes its verbal contradictory, "There is no infallible and adequately knowing being," or, in other words, "Every being is defective in knowledge," but does this alleged alternative represent a conceivable fact? What positive bearing could this supposed fact have?

No doubt the statement "Every *man* is defective in knowledge," or, "No man (or animal) is omniscient or infallible," does have positive bearings. We test what people say, since, after all, they might be mistaken. But when we refer to an omniscient being we do not mean a man (unless some Christians perhaps actually believe that Jesus, the man of Galilee, was omniscient).

We mean a being with other equally unique and non-human properties, including that of *not* having a portion of the physical world as one's body. The all-knowing being is at least cosmic, if not super-cosmic. It might seem that if there is one who knows all truth, then success in the effort to hide motives or actions is excluded, since everything is bound to be known. But is this really a positive exclusion? I cannot here fully explicate my reasons for questioning this. But so much seems clear: the mere being of God does not prevent men from *supposing* that they can hide their deeds or their thoughts; they have only to be unaware of the divine existence to entertain this supposition. True, they will be deceiving themselves, but is not the attempt to escape from being known to an all-wise and all-good knower essentially self-deception? Is it not the self-contradictory effort to dodge the truth itself? One may very well wish to escape the impertinent and unwise, if not malicious, scrutiny of men, but that is another matter altogether! It may be argued that if there be no deity one may—and this would be a partly positive fact—enjoy immunity from divine punishment. However, the logical connection between divine wisdom and goodness (merely as such) and the here relevant theories of divine punishment is by no means clear, at least to my understanding. I rather think, then, that what is positive in the "escape" in question either concerns special alleged facts concerning "deity" not inherent in the definition of the term, or is a flight from self-knowledge, from facing reality, and this flight the existence of deity does not exclude.

Factual existence is always alternative, *this or that instead*. But "God or X instead" is not a valid alternative. There is no "instead" in this case. There is no "place" which, if God does not occupy it, something else could. A person may worship an idol instead of God, but the alternative here is in respect to states of mind existing in the person, not in respect to the existence or non-existence of God. There may also be divine acts or decisions which exclude otherwise positive possibilities of fact; but these must be free, factual decisions, not inherent in the mere existence of God.

You can, of course, argue as follows: the existence of God means a divinely ordered world; the non-existence of God means either no world or an unordered or poorly ordered world. Perhaps

our world is unordered or poorly ordered. But this line of thought presupposes that there is a particular sort of order which God would impose on the world, and that this follows logically from the bare conception of God. This is plausible, perhaps, if one holds a metaphysics in which the idea of freedom, taken to mean creative choice, is not held to be a basic requirement of creaturely existence. For then it seems reasonable to infer that the world, as divinely created, ought to be a *perfect* order in which every item is exactly in its place. But on the view, which I should oppose to this, that any possible world must consist of more or less free individuals (otherwise they would not even be individuals), the ordering of these individuals can only consist in setting limits to their exercise of freedom, that is, in the partial restricting of the chaotic aspect inherent in individuality. Accordingly, the divine ordering does not exclude elements of conflict, evil, and disorder; hence no world ordered enough to make knowledge possible could contradict the statement, "There is a divine orderer." And a world which could not be known is irrelevant or meaningless.

I once knew a young man who said, "I want to believe in a man's world, not one coddled by a deity." He was supposing that the divine existence would exclude something positive. But if he meant a world in which much depends on human efforts, and in which we are not told all the answers to our questions but are permitted, and indeed more or less compelled, to think for ourselves, then only an arbitrarily defined deity excludes this. God might perhaps *choose* to coddle us, but his mere existence would not *require* that he do so. And if coddling is bad, and God is conceived as wise and good, then God would, it seems, be required by his nature to avoid coddling man. As for the importance of human choices, various philosophers and theologians have shown how deity may be defined in such a way that human efforts contribute real value to the total reality, despite the sense in which deity is perfect.

My suggestion, then, is that the mere existence of deity interferes with nothing whatever that is positively conceivable. What follows? Some would say that it follows that the statement, "Deity exists," is meaningless. But then the state-

ment, "Something exists," is also meaningless, for it too interferes with nothing that is positively conceivable! And so far from being meaningless, "Something exists" is obviously true. Accordingly, "There is a reality which is divine," although it excludes nothing particular, is not for that reason without meaning. Its proper status is not that of a fact, but of a claimant to metaphysically necessary truth. The alternative to accepting the claimant is indeed the contention that it is meaningless or contradictory. That this is the issue was Anselm's great discovery.

It is strange how few have remarked that the statement, "There is one who infallibly knows all facts, and who, if other facts had obtained, would have known these instead," cannot itself stand for a fact. It affirms, rather, a *universal correlate* of fact, implying this: to be a fact, and to be known to one who also knows all other facts, are but two aspects of the same thing. The inevitability of the divine knowing means the inevitability of facts being known. To be is to be known to God. (Better: to be is to feel one's value as appreciated by God.[5]) Since God is conceived as having self-knowledge, he also *is*, but not solely in the same factual sense. For whatever the facts, God knows his own existence. Thus his knowledge that he exists is not one of the factual alternatives, but the common feature of them all that, if actual, they are known to him who inevitably is self-known. Thus the existence of an all-knowing or divine being is affirmed in a statement factually empty, telling us not a single one of the facts which the all-knowing being knows. But although empty the statement is not insignificant. For it provides a correlate to every factual statement which enables us to be conscious of its deeper meaning. Such and such is fact, then, means, such and such is known to one who knows also all other things. If the fact is tragic, then we do not face this tragedy alone. If there is need that this tragedy be taken account of in the ordering of the world, then superior wisdom will respond to this need

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[5] See *The Divine Relativity*, p. 141; and my article, "Ideal Knowledge Defines Reality: What was True in Idealism," *Journal of Philosophy*, 43 (1946), 573-82; also "The Synthesis of Idealism and Realism," *Theoria*, 15 (1949), 90-107.

with some suitable action. We cannot know what this will be, for our notion of what in particular is suitable is not binding in the case, we not being supremely wise concerning the particular situation. But we can take legitimate comfort in the sense that what ought to be done for the world will be done, and that what ought to be left to creaturely freedom will be left to it. Is this comfort empty? In a sense, yes. For it says no more than what every animal, in its fashion, affirms by the very act of living. To live, and to accept that in the universe which is not open to any creature's control, is one and the same action. But man, alone among the animals, is able to confuse himself with ratiocinations, and to *imagine* that he can quarrel with the essential character of the universe while still living in it. Theistic faith lifts the unity of life with its essential environment to the level of consciousness. On that level this unity has a new value, a new beauty. Yet it is not the beauty of any fact, but of fact as such, neutral to factual alternatives. This is a pure, unsullied, never-failing beauty. It is not the supreme beauty, for that is the harmony of all things, both necessary and contingent, a harmony which is itself, I hold, contingent—a superior fact which is only vaguely accessible to us in our factual experience. Metaphysics gives us no fact, ordinary or superior, but it gives us the key to fact, on both levels, the clue or ideal by which factual experience is to be interpreted. It gives us a sense of what a German theologian has called the accompanying melody, *Begleitmelodie*, of all existence. The import of the word "God" is no mere special meaning in our language, but the soul of meaningfulness in general, for it refers to the Life in and for which all things live.

University of Chicago.

TRUTH AND ERROR

PRAVAS JIVAN CHAUDHURY

The problem we wish to discuss here is that of perceptual truth and error invading and usurping one another's province. Some argue that since we have erroneous perceptions in plenty, which we take for true ones till they prove false, we can never be sure of the truth of any perception; whatever appears to be true may only appear so and may prove false. Others argue that since we have true perceptions in overwhelming majority and since every perception appears to be self-evidently true till it proves false, if it does at all, we cannot be sure of the error of any perception whatsoever; what appears to be erroneous may only appear so and may prove true. So that while some argue for radical scepticism, others argue for the opposite, and both ascribe to our common sense notions of truth and falsity only a heuristic or practical value. For we have to accept the uncontradictory and coherent perceptions and reject the others for the efficient conduct of life. Thus while some seek to characterise all perceptions as false and others as true, both mean by truth and falsity something different from what we ordinarily do, this language-shift being the natural consequence of their shift in philosophical position. For if every perception be held as true, there cannot be a false one to distinguish truth from falsity, and a similar circumstance appears if every perception be held as false.

Let us now examine one of these radical positions, say, the sceptical one first. According to this, since error is a fact, we may as well treat every perception as erroneous, only undetected so far and so accepted as true. But if we accept error as a fact we must also accept truth as such, for an error cannot be known as one unless we know something as true. When one says one mistook a rope for a snake one must know the rope truly, otherwise there can be no mistake. One may think erroneously, "I am apparently seeing a rope but it may be that I am only imagining it, just as I imagined the snake; I may be mistaking something else for a rope." But then one must also see that as the rope is

thus doubted, the unreality of the snake must also be doubted, for it is against the rope as real that the snake becomes unreal. And now one would have to say, "Perhaps I am imagining this rope which might really be the snake I thought I imagine." But in this state of oscillation one cannot pronounce any judgment at all, and so cannot assert anything about the truth and falsity of any perception. The original perception proving false leads one, through analogy, to doubt the latter perception. But if there is a doubt regarding the falsity of the original perception, there cannot be a legitimate doubt regarding the validity of the later one. More generally we may say that if one doubts one's perceptions of certain objects (e.g., men, ropes, etc.) on the ground that some perceptions regarding these had proved false in the past, this doubt logically involves the possibility of those perceptions, rejected as false, being true. So that though one may psychologically take up the attitude of doubt with respect to every perception, this attitude has no rational backing. If, however, one doubts certain objects of perception (e.g., men) because some other perceptions e.g., snakes) proved false, one has only a weak analogy and is, moreover, forced to doubt all perceptions, including those which proved certain perceptions false, thereby starting the original doubt. But then the reasoning given above which will dispel this doubt will have to be applied. So that this doubt cannot be rationally justified. The argument that since certain perceptions have proved false therefore every one of them may prove so is, after all, a very weak one. A perception is false only when it is falsified by a true one, and we cannot doubt a perception unless it is so falsified.

If we doubt on principle it is easy to see that we cannot prove anything either as true or as false and that we cannot get beyond doubt. If we doubt the perception of the snake on principle, we cannot prove it to be false, for the rope that is said to cancel it would itself be doubted. The principles of cancellation and non-cancellation, which usually work to decide falsity and truth, respectively, of perceptions, will not help if we are consistent in our use of the principle of doubt. Nor can the principle of coherence help us. For how can we cease to doubt the perceptions that cohere with the given perception and ordin-

arily tend to validate the latter? Again, even if we accept these verifying perceptions as true, we cannot go beyond collecting *evidence* for the truth of the given perception to a *verdict* of truth about it. For there will always be the possibility of some conflicting evidence turning up. A perfectly coherent system is only an ideal, and so the coherence test of truth can but strengthen our faith in some perception. It may help practice but it cannot give knowledge of truth regarding it. To accept degrees of truth, as does the coherence theory, corresponding to degrees of coherence, is to deny the common sense meaning of the concept of truth and to substitute for it the concept of acceptability of belief for practical purposes. For it is not truth that can have degrees but only our knowledge of it. Moreover, why should the laws of co-existence and succession relating the perceptions be used to test the truth of the latter? Are we more sure of these laws than the perceptions themselves which are in fact the basis of these laws? Coherence cannot help in deciding truth and falsity if we start with the principle of doubt.

So we see that the principle of universal doubt is neither an epistemological law derived from certain considerations (viz. the fact of error) nor a useful theory. Let us now see briefly how the principle of universal acceptance fares in these respects. As a derived law it cannot be maintained: the truth of some perceptions validating other perceptions is as questionable as that of falsity of some perceptions vitiating others. And as an epistemological theory this principle is as unhelpful and stagnating as its opposite. For it will not allow us to doubt or falsify any perception. The perception of a snake, cancelled by that of a rope and rejected in practice as an illusion, will have to be rationally accepted as true, for if this is regarded as false why not the perception of a rope, for this may also be cancelled in the future by some other perception? Thus we would have to treat all perceptions, both true and illusory, as true, only that the latter class of perceptions will be rejected in practice because they conflict with the majority of other perceptions which get along well with each other and form a system. But this means that we cannot determine truth and falsity of any perception in the ordinary sense of these terms, just as we are forbidden to do

the same if we adopt the principle of doubt as an epistemological theory or procedural policy. So the value of the principle of universal acceptance is no greater than that of the principle of doubt in epistemology.

These two rival principles both commit one fundamental mistake: they reduce both truth and error to something neutral. As shown at the beginning, if every perception is declared true, truth loses its distinctive character or meaning, for there is nothing to distinguish it from falsity. The consequence of declaring every perception to be false is similar. Thus whichever of the two, truth or falsity, invades the province of the other and ousts it from legitimate sphere, it undergoes a loss of identity. It is a Pyrrhic victory, for there is a neutralisation of one by the other. Thus affirmationism and scepticism, by characterising every perception as true and false respectively have only succeeded in dissolving the common sense distinction between truth and falsity and, with it, the epistemological problem regarding these. They are one in their negative thesis that our common sense notions of truth and falsity hold only for practical purposes and really mean acceptability and non-acceptability for practice. In their positive thesis too they are really indistinguishable, for truth and falsity in their extra-ordinary senses, each applicable exclusively to all ostensible perceptions, are indistinguishable. There is no sense in calling the whole of the perceptual world, including the dreams and illusions, either real or unreal when there is no other world against which the former is either real or unreal.

Truth and falsity must not be allowed to invade one another's province and neutralise themselves. But then what procedure should be adopted when we are faced with the problem of truth and error? The natural course would be to follow the usual common sense procedure. This is to treat any perception as true yet to reject it as false whenever it is contradicted by another, without bothering over the inconsistency involved in this procedure and without attempting through an analogical argument to reduce truth to falsity or falsity to truth. And perhaps common sense is right in this. False perceptions are really mock perceptions, projections of imagination passing for bona fide perceptions. How can truth be related to falsehood, when the false does not

really exist but only appears? To seek to relate the two is to slur over the fundamental difference between the existent and the non-existent and to treat appearance as truth. This is a repetition on a philosophical level of what happens in everyday practice. So common sense is really right when it keeps the two clearly distinct, though it may appear to be inconsistent in accepting a perception as true and yet rejecting it as false when it is contradicted by another. It requires rather a tough mind to keep up this attitude in philosophy where the temptation to reduce entities to their common denominator is a prevailing force.

Presidency College, Calcutta.

ON THE PRESUPPOSITIONS OF INDUCTION

ARTHUR W. BURKS

1. Introduction

We term a *postulate theory of induction* any epistemological theory which maintains that the validity of inductive reasoning is in a philosophically important sense relative to some factual, synthetic assumptions (called the presuppositions or postulates of induction) about the general nature of the universe.[1] Russell, in connection with what he calls the "postulates of scientific inference," has advanced such a theory [Human Knowledge],[2] and there are other such theories, one of which will be mentioned below.

This general type of view may be characterized more fully by using the notion of an inductive method. All scientists use approximately the same inductive method, which we will call the *standard inductive method.* This method is based on the rule of induction by simple enumeration, which may be roughly stated as follows: if it is known only that a certain property Ψ has accompanied another property Φ in a number of instances, then the larger this number of instances the higher the probability that the next occurrence of Φ will be accompanied by Ψ. Though scientists actually reason inductively in accord with this rule, it is important that there are logically consistent inductive methods based on alternative rules. We will describe two of these briefly. The *inverse inductive method* assigns probabilities according to the rule that if it is known only that Ψ has accompanied Φ a number of times, then the larger the number of instances the lower the probability that the next occurrence of Φ will be accompanied by Ψ. The *random predictive method* assigns to the proposition that the next occurrence of Φ

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[1] This paper was written while the author was a John Simon Guggenheim Memorial Fellow.

[2] All references for the present work are given in full in the bibliography appended to the end of this paper.

will be accompanied by Ψ a probability completely independent of the number of times that Ψ has accompanied (or failed to accompany) Φ in the past.[3].

Postulate theories of induction may be explained in terms of alternative inductive methods as follows. Such theories rest on a distinction between (1) the universe about which we get information and make predictions and (2) the inductive method we use to make these predictions on the basis of the information we have. The essential core of a postulate theory of induction is that there are some quite general synthetic propositions about the universe which the use of the standard inductive method (rather than one of these or other alternative methods) presupposes in the sense that if these propositions are in fact false the standard inductive method is not properly applicable to the universe, and one could with as much justification employ any of the alternative methods. Since according to a postulate theory the validity of every inductive argument depends on these factual presuppositions, it follows on this view that there can be no inductive verification of the presuppositions of induction, and hence no non-circular inductive justification of the use of the standard inductive method; but the claim remains that there are general factual propositions relative to which the use of the standard inductive method may be validated and which in a certain sense explain this method (Burks [Presupposition Theory], p. 193).

The present writer has proposed a postulate theory which he calls the *presupposition theory of induction*. This is a strong form of postulate theory, which maintains not merely that there are some presuppositions on which the use of the standard inductive method rests, but that there are sufficient presuppositions to determine that this is a better method to use than any of the alternatives. According to this theory, the probability of any hypothesis is relative not only to an evidence statement but also to a presuppositional statement. For each inductive method there is a different presuppositional statement relative to which it is the

[3] These three inductive methods have been defined more precisely by means of Carnap's concept of degree of confirmation (Carnap [Foundations], Burks [Presupposition Theory]).

only correct method to use. For example, if a presuppositional statement (Π_s) for the standard inductive method is true, then that method is a better method to use than the random predictive or the inverse inductive methods. The presuppositional theory may be stated more explicitly as follows:[4] There is a concept of probability (called "probability$_p$" or "$\mathbf{P}_p$") such that (1) by means of it certain facts about induction may be explained (e.g., the fact that each inductive method is logically consistent, and hence that there is no purely logical way of deciding among them), and (2) it has the two properties (a) and (b) described in the next paragraph.

Let h be an hypothesis, e an evidence statement, x the approximate probability value assigned by the standard inductive method to h on e, and Π_s the conjunction of certain presuppositions of the standard inductive method. The first property (a) which the presupposition theory claims for probability$_p$ is that

$$\text{(I)} \qquad \mathbf{P}_p\,(h,\ e \cdot \Pi_s) = x$$

is a statement which is logically true. The second property of probability$_p$ concerns the relation between this concept and degree of belief. We say that A believes h on e to degree x when, roughly speaking, A has dispositions to act in certain ways in conditions of uncertainty, which dispositions are related to h, e, and x in certain ways; e.g., if e is A's total information he will bet on h with odds x to $1-x$. The second property (b) which the presupposition theory claims for probability$_p$ is that any person who accepts and uses the truths of mathematics and logic [including (I)] and believes the presuppositional statement Π_s, will believe h on e

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[4] For a complete exposition see Burks [Presupposition Theory] Secs. 5 and 6. The "Π_s" used in the present paper is roughly the same as the "Π^*" used earlier, but it differs in a technically important respect. "Π^*" was defined in terms of Carnap's functions c^*. This is a regular c-function, and hence assigns a non-zero initial probability to every logically possible universe. In contrast, "Π_s" assigns a zero probability to some logically possible universes (see Sec. 4 of the present paper). Actually the difference is merely of technical importance, for in the earlier paper we were using c^* only as a representative of the standard inductive method in a qualitative universe, and we indicated there that any other function which behaves in the same general way would be satisfactory.

to degree x. This claim may be alternatively put: "A believes both $\mathbf{P}_p(h, e \cdot \mathrm{II}_s) = x$ and II_s" implies "A believes h on e to degree x."

Let us compare "probability$_p$" with the ordinary (inductive, non-frequency) use of "probability" in a statement of the form

(II) probability $(h, e) = x$.

It follows from (a) and the fact that II_s is a presuppositional statement for the standard inductive method, that if (I) is logically true then x is the approximate probability value assigned by the standard inductive method to the pair h, e; i.e., for the same h and e, if (I) and (II) are both true, the values of x in the two cases are approximately the same. Moreover, the ordinary use of probability has the relevance for action possessed, according to (b), by

(III) $\mathbf{P}_p(h, e \cdot \mathrm{II}_s) = x \cdot \mathrm{II}_s$,

for "A believes probability $(h, e) = x$" implies "A believes h on e to degree x." These two points of similarity between "probability" and "probability$_p$" justify the claim of the presupposition theory that (III) is a good analysis of (II).[5] Of course to say that (III) is a good analysis of (II) is not to imply that the presuppositional statement II_s actually functions in the ordinary use of "probability": while this presuppositional statement should be compatible with the beliefs of the users of the standard inductive method, it is not found in ordinary usage but is rather a philosophical invention designed to play a foundational role in induction. In other words, the concept of probability$_p$ embodies an epistemological theory which goes beyond ordinary usage and is designed to explain certain facts about induction.

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[5] For an elaboration and defense of these claims about "probability" see Burks [Carnap's System], Sec. C. In the terminology of that paper the assertion that the concept of probability has the two properties (a) and (b) can be expressed by: the concept connoted by (III) is a *cognitive* concept which is star-method committive. Cf. Sec. E3 of [Carnap's System] for a partly *non-cognitive* analysis of "probability" as used in (II); in this analysis the committive element is non-cognitive, while in (III) the committive element (the assertion of the presuppositional statement II_s) is cognitive.

The relation of the presupposition theory to other postulate theories of induction and to non-postulate theories may be expressed as follows. An inductive method consists of a set of rules for assigning probabilities to pairs of propositions. The question may be asked: to what extent are there ontological statements corresponding to the rules of an inductive method—not at all, partially, or completely? The first alternative states that we cannot formulate any factual statements corresponding (in the way indicated) to rules of induction, the second position constitutes a postulate theory of induction weaker than the presupposition theory, while the third alternative is the presupposition theory.

The presupposition theory does not consist of the presuppositions but merely of the claim that they exist. However, the direct way to establish the theory is to formulate them and to show their adequacy. The aim of the present paper is to present some speculations toward this end. Specifically, these speculations are directed toward the construction of Π_s, a presuppositional statement for the standard inductive method as applied to a simplified universe. This universe consists of discrete individuals (space-time positions or regions) each characterized by only monadic properties (cf. Burks [Presupposition Theory], Sec. 3). We do not claim to have a formulation of Π_s which is adequate to fulfill the role required of this statement by the presupposition theory of induction. But we do offer some partial suggestions toward this end. These will serve to indicate the kind of properties we think a presuppositional statement for the standard inductive method should have and hence to complete our formulation of the presupposition theory of induction. We need to do so because some of the presuppositions we have in mind are basically different from the kind many philosophers talk about. This holds for some philosophers who accept postulate theories of induction as well as for some who reject such theories. Thus all of our presuppositions differ considerably from Russell's postulates of scientific inference; and our formulation of the principle of the uniformity of nature has little in common with what Carnap, who rejects the need for presuppositions of induction, discusses under this title ([Foundations], Sec. 41F).

Our presuppositions of induction resemble closely certain principles of Keynes's ([Treatise], pp. 226, 248, 251-64, 276, 427), for we feel that Keynes's work on induction embodies the most satisfactory attempt (though it is neither wholly successful nor complete) to formulate an adequate presuppositional statement for the standard inductive method as applied to a qualitative (non-quantitative) universe and to indicate its role in inductive arguments. * Hence we shall take Keynes's formulations as a point of departure and proceed by modifying them. It should be noted, however, that whereas we make much use of Keynes's work in connection with our presupposition theory of induction, Keynes himself did not direct it toward such a theory but rather toward a theory of induction which is incompatible with ours (see Section 7).

2. The Causal Modalities

The main differences between our presuppositions of induction and Keynes's stem from the explicit use we make of the causal modalities. Let us begin by discussing these. We have elsewhere ([Causal Propositions] and [Dispositions]), under the title "logic of causal propositions," treated the logic of the causal modalities formally and in some detail. In the present section we will describe briefly some of the main features of this formal system and then indicate the interpretation of it that we will use.

We will employ chiefly the modality *non-paradoxical causal implication*, symbolized by "**npc**." We will first explain this notion in intuitive terms, and then discuss its relation to some other modalities.

Let the individual variable "x" range over space-time regions or positions and let the individual constants "a," "b," etc., designate these positions. To simplify matters we will consider only cases in which the cause-event and effect-event occur at the same or contiguous space-time positions (thus excluding action-at-a-distance and action-at-a-time-interval) and shall take our space-

* Keynes's results have been ably expounded, criticized, and extended by Nicod [Induction] and Broad [Principles].

time regions sufficiently large to include both the cause-event and the effect-event. Let the monadic predicate variables "Φ," "Ψ," etc., range over properties. For purposes of illustration consider the predicates "Gx" ("gunpowder is located at position x"), "Lx" ("x is lighted in the presence of a certain amount of oxygen, etc."), and "Ex" ("there is an explosion at x"). Since the ignition precedes the explosion, "Lx" is more strictly stated as "an ignition takes place at the early part of x" and "Ex" as "an explosion takes place at the latter part of x."

We will call a statement of the form "$(x)(\Phi x$ **npc** $\Psi x)$" *a causal universal* and one of the form "$(x)(\Phi x \supset \Psi x)$" a *material universal*. A causal universal implies the corresponding material universal but not vice-versa, for the latter says that every space-time position is in fact either characterized by not-Φ or by Ψ, while the former asserts in effect that this characterization occurs not accidentally but by virtue of a causal law. There is a similar difference between their respective substitution instances. Thus "$GbLb \supset Eb$" means that either G and L do not both occur at b or E occurs at b, while "$GbLb$ **npc** Eb" means that there is a causal connection from G and L to E holding at position b.

It is thus clear that "**npc**" comes close to the ordinary use of "cause." Also, the meaning of "**npc**" is closely associated with the ordinary use of the subjunctive. Thus "$GbLb$ **npc** Eb" may be approximately translated into "If gunpowder should be ignited at b with a certain amount of oxygen present, etc., then it would explode." From "$GbLb$ **npc** Eb" and the fact that there was gunpowder at b which was not lighted we may validly infer the contrary-to-fact statement "If the gunpowder had been ignited at b it would have exploded," but this conclusion does not follow from "$GbLb \supset Eb$" and the fact that there was gunpowder at b which was not lighted.

We can best relate "**npc**" to some other modal notions by giving its formal definition.

p **npc** q
is defined by

(1) p causally implies q,
(2) p does not logically (strictly) imply q,

(3) p is causally possible, and
(4) q is not causally necessary.

The reason for the second condition is that as a matter of formal convenience it is stipulated that a logical implication implies the corresponding causal implication; but in this degenerate case the causal implication is true by virtue of the rules of logic, whereas an assertion of causal connection (in the ordinary sense) is factual. Conditions (3) and (4) prevent the definiendum being true because of the paradoxes of causal implication.

Before going further we must delimit our problem. The problem we wish to treat in this paper is that of the nature of the probability relations among statements about physical objects and events, including causally modal statements about these, and we will look for presuppositions for these probability connections. Further problems are engendered when sense-data statements are brought into the system, in particular, the problem of the nature of the probability relations between sense-data statements and physical-event statements. In the opinion of the writer no physical-event statement is translatable into or even logically equivalent to a (compound) sense-data statement; i.e., phenomenalism as ordinarily formulated is false. There are, however, valid probability inferences from sense-data statements to physical-event statements. These probability relations rest on presuppositions, just as inferences among physical-object statements do, and to a large extent they rest on the same presuppositions; but in the opinion of the writer they also require additional presuppositions which involve noneliminable references to physical objects. Presuppositions for inferences from sense-data to physical-event statements lie for the most part ouside the scope of this paper, but we will make some brief remarks about them in Section 5.

Let us now consider the epistemological status of the causal modalities. A question of fundamental importance for philosophical theories of induction is the following: Can all statements which involve the causal modalities and which are factual (nonlogical) be adequately translated into an extensional language (e.g., that of *Principia Mathematica*)? In the interest of brevity and concreteness we will consider this question chiefly in connection with causal universals and their substitution instances, but

it should be remembered that these are taken as typical cases. There are strong reasons for holding that a causal universal "(x) $(\Phi x$ **npc** $\Psi x)$" is not logically equivalent to the corresponding material universal "$(x)\,(\Phi x \supset \Psi x)$" and that corresponding substitution instances of them are not logically equivalent. But it is a more debatable question as to whether extensional translations can be found for sentences of these forms, i.e., sentences logically equivalent to them but expressible in an extensional language. Though several attempts have been made, no one has yet succeeded in finding satisfactory extensional translations for such sentences. There is also the possibility of analyzing a causal universal in terms of extensional notions together with the logical modalities, but no one has yet produced such an analysis. Under these circumstances it seems worthwhile to consider seriously the thesis that no translation of either kind exists for causal universals and their substitution instances, and similarly for other kinds of factual sentences involving the causal modalities.

We will call this philosophical hypothesis the *thesis of the nonextensionality of the causal modalities*. It may be alternatively stated: the causal modalities cannot be defined in terms of extensional operators and the logical modalities alone, but at least one causal modality must be taken as primitive. (It is sufficient to take causal necessity.) This thesis is rendered plausible by the natural and direct interpretation of causally modal statements. Thus a statement of causal necessity seems to state what is *potentially* the case as well as what is *actually* the case, whereas an extensional sentence states only what is actually the case (Burks [Causal Propositions] and [Peirce]). Again, a counterfactual statement seems to do more than describe the actual state of the universe, for it says something about what *would have been* the case if the universe had been different in a certain respect. And so we interpret "Φb **npc** Ψb" to mean that there is a *causal connection* holding from the property Φ to the property Ψ at position b, which causal connection is not completely describable in extensional terms. Note that on this interpretation the notion of causality has meaning in an individual case. This interpretation of the logic of causal propositions together with the thesis of the nonextensionality of the causal modalities fits in well with what we

have already included in the presupposition theory of induction; we will accordingly make them part of this theory.

Some statements attributing properties to physical objects (e.g., "this object is red") are extensional, but if the thesis of the non-extensionality of the causal modalities holds, not all are (e.g., "it is causally necessary that if this object is released it will fall"). We call the properties attributed to physical objects and events by extensional statements *extensional properties* [7] (e.g., redness, moving at a certain velocity, either not being released or falling), and we call the non-extensional properties attributed to physical objects by factual non-extensional statements *causally modal properties* (e.g., the property designated by "it is causally necessary that if object x is released it will fall"). Dispositional properties are causally modal properties, since a dispositional statement (e.g., "this piece of metal is soluble in aqua regia") involves a causal modality implicitly (Burks [Dispositions]).

It follows from the thesis of the non-extensionalitiy of the causal modalities that a complete extensional description of the world (i.e., a description complete as far as extensional properties are concerned) does not logically determine the truth status of all factual causally modal statements, and hence does not logically determine the truth status of all factual statements about the physical entities of the universe. To be sure, a complete extensional description of the universe, together with suitable presuppositions, determines a probability$_p$ for every such factual statement and hence for every such causally modal statement, but this is a different matter. Consider, for example, a complete extensional description of a (logically possible) universe in which the material universal "$(x)(\Phi x \supset \Psi x)$" holds, where "$(x)(\Phi x \supset \Psi x)$" is not logically necessary. From the point of view of the presupposition theory this complete extensional description entails neither the truth nor the falsity of the causal universal "$(x)(\Phi x$ **npc** $\Psi x)$," though of course, as mentioned before, it is inductively relevant to the truth-status of this sentence. Again, consider a contrary-to-fact statement of the form "If Φa had been the case,

[7] This does not mean that the identity conditions for these properties will be taken to be extensional; see Section 3.

then Ψa would have been the case," and an extensional description of a possible universe in which "$\sim\Phi a$" is true; neither the counterfactual nor its negation is entailed by this description, though there are important inductive relations between them.

Inductive arguments from extensional data to causal universals are of special interest to the presupposition theory, and in the present paper we will concentrate on a particular argument form of this sort. We will call it an *induction by simple enumeration to a causal universal*,[8] or more briefly, an "inductive argument to a causal universal." The conclusion (c) of such an argument is a causal universal "$(x)(\Phi x$ **npc** $\Psi x)$"; the premise (p) is a finite conjunction "$\Phi a \supset \Psi a \cdot \Phi b \supset \Psi b \ldots$." of extensional (factual) reports of physical events, each of which is verifiable or refutable by more or less direct observation. Such an argument transforms into a statement of the form "probability $(c, p) = x$," where c is a causal universal and p is extensional. If we had a presuppositional statement adequate to probability statements of this kind, our main problem would be solved, because probability relations of other kinds could be handled derivatively. This would be in close accord with actual scientific practice, since extensional statements which are not established by more or less direct observation are usually confirmed indirectly via causal laws. For example, an analogy to life on Mars is based in large part on our knowledge of the causal conditions of life on this planet, and a prediction of an eclipse is inferred from accepted causal laws together with observations of present conditions.

Our problem, then, is to frame presuppositions which will justify inductive arguments to causal universals. Now by the thesis of the non-extensionality of the causal modalities, the causally modal conclusions of these inferences are basically different in kind from the extensional premises. This suggests that the premises need to be augmented by some causally modal assertions, and hence that some of the presuppositions to be added to the premises should involve the causal modalities. We will offer

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[8] Note that in the pattern of inference usually called "induction by simple enumeration" the premise is of the form "$\Phi a \Psi a . \Phi b \Psi b \ldots$." rather than of the form we use.

(in Section 4) some presuppositions of this sort: a uniformity of nature principle concerning the invariance of causally necessary connections between properties, and a principle asserting the existence of causally necessary connection among some properties. Before doing so, however, we must present a limited variety presupposition which will limit the number of properties referred to in the two preceding principles.

3. The Principle of Limited Variety

Keynes formulates a principle which he names "the Inductive Hypothesis" but sometimes refers to as "the hypothesis of the limitation of independent variety." It is the assumption that

> . . . the qualities of an object are bound together in a limited number of *groups*, a sub-class of each group being an infallible symptom of the coexistence of certain other members of it also. ([Treatise], p. 252.)
> . . . the objects in the field, over which our generalizations extend, do not have an infinite number of independent qualities; . . . in other words, their characteristics, however numerous, cohere together in groups of invariable connection, which are finite in number. ([Treatise], p. 256.)

We shall develop two distinct presuppositions out of Keynes's Inductive Hypothesis. The first, called the "Principle of Limited Variety," concerns the number of properties exemplifiable in the universe; it will be stated in the present section. The second, called the "Principle of the Existence of Causal Connections," concerns the interconnections of these properties; it will be presented in the next section in connection with the "Principle of the Uniformity of Nature."

Our Principle of Limited Variety is concerned with properties of a certain kind which for the sake of brevity we will call "λ-properties." A *λ-property* is by definition a property which is first-order, extensional, monadic, symbolic, and which satisfies an additional condition mentioned below. The *Principle of Limited Variety* states that there are finitely many λ-properties such that all λ-properties exemplified in the universe are finite compounds of these. (Cf. Carnap [Foundations], p. 74). Several features of this statement require elaboration.

We mention two brief points first. The principle refers only to extensional properties, and makes no mention of causally modal properties. As previously indicated, we think that the standard inductive method presupposes that there are causally necessary connections in the universe, and hence that causally modal properties are exemplified in the universe; but since these properties involve extensional properties, a finitude assumption concerning the latter is sufficient for our purposes. The scope of the principle is further restricted to first-order properties (e.g., blueness) and does not include, e.g., the property of exemplifying all the properties of a specified class of first order properties.

Predicates like "x is the color of copper sulphate," "x is at this (pointed to) place," "x is contiguous to a red object" contain only one free variable and hence are monadic predicates, even though they involve relational predicates implicitly. We call any property designated by a monadic predicate a monadic property. We stated in Section 1 that we are concerned with a presuppositional statement for a simplified universe in which the individuals (space-time positions) are characterized only by monadic properties, and hence we restrict the scope of the Principle of Limited Variety to such properties.

Symbolic-properties (e.g., circularity, blueness) are to be contrasted with indexical-properties (e.g., being at this pointed-to space-time position). The distinction has been elaborated in Burks [Index], p. 683, the basic idea being that symbolic-properties can be designated by non-indexical symbols (as well as by indexical symbols, cf., "the color of this hat"), while indexical-properties can be named only by means of indexical symbols. The reason for restricting the properties referred to by the Principle of Limited Variety to symbolic-properties is as follows. It is intended that this principle permit an infinite number of different particulars (e.g., regions of space time) in the universe, and hence an infinite number of possible numerical differences. Since there are at least as many distinct indexical-properties as there are distinct individuals in the universe (every token of "being at or adjacent to this region of space time" used at a different place or time names a different indexical-property), the Principle of

Limited Variety asserts finitude not with respect to all properties but only with respect to symbolic-properties.

For a similar reason properties of the following sort are excluded from the class of λ-properties and hence from the scope of the Principle of Limited Variety: being the 10th temporal successor (where space-time is divided into discrete regions) of a red event. Clearly if space-time is infinite (and we do not wish to presuppose otherwise, whatever the empirical evidence may be), there would be an infinite number of such qualities, and then there would be an infinite number of possible causal laws to consider (see Section 6). Actually, this restriction is essentially the same as our earlier restriction to cases in which the cause-event and the effect-event occur at the same or contiguous space-time regions, since the claim that *a* having Φ causes a distant space-time region *b* to have Ψ can be expressed by saying that *a* having Φ causes *a* to stand in a certain relation to *b*. This earlier restriction was made in the interest of simplicity and should ultimately be relaxed. On the other hand, such a restriction cannot be completely removed, because if we allowed the cause-property and the effect-property to be separated by arbitrarily large space-time intervals, a finite number of symbolic properties would give rise to an infinite number of possible laws.[9]

Since the operation of counting the members of a class involves a criterion of distinctness as well as a criterion of admissibility, we will want to make some remarks about the identity-conditions for properties of the Principle of Limited Variety. Mere equivalence in denotation of terms is not sufficient to establish identity of properties in the sense required here. Thus redness and circularity would be distinct properties, even if all red things were circular and vice versa. The point here is that it is logically possible that there be a non-circular red thing, and this possibility must be taken account of in inductive reasoning. Logical equivalence of property-designating expressions does establish identity of properties; e.g., redness and red-and-(circular or non-circular)-ness are the same property. This stipulation is necessary because it is trivially true that there are an infinite

[9] See also the reason given by Nicod [Induction], p. 247.

number of different predicates equivalent to a given predicate, and if these were counted as distinct the Principle of Limited Variety would be trivially false. But logical equivalence of expressions is not a necessary condition for these expressions to designate the same property. Thus if a hat is colored grey, "greyness" and "the color of that hat" name the same property, yet are logically non-equivalent.

This concludes our formulation of the Principle of Limited Variety. We will postpone discussion of its role in inductive arguments (to Section 6), but will here make one remark about its nature. There is no logical impossibility in a universe which exhibits an infinite number of irreducible properties (or their negations), and therefore the Principle of Limited Variety is not a proposition of logic, but a factual, synthetic proposition.

4. The Existence and Invariance of Causal Connections

The next presupposition we shall formulate is the Principle of the Uniformity of Nature. Before doing this, however, we must distinguish some basic kinds of uniformity.

Probably the most common meaning of "Nature is uniform" is that the amount of *extensional, statistical uniformity* in the universe is relatively high. This kind of uniformity may be illustrated as follows. Consider a universe of individuals possessing only monadic properties, and consider only the kind of properties referred to in the Principle of Limited Variety, i.e., consider only λ-properties. Then a universe in which every individual was qualitatively identical would be extremely uniform in the sense in question. Extensional, statistical uniformity is the kind of uniformity involved in the physicist's concept of entropy, which concept plays an essential role in the second law of thermodynamics. An example occurs in the following quotation (italics added):

> . . . a state in which the energy of the thermodynamic system is distributed with fair *uniformity* among all its molecules has a far greater probability than the state in which some molecules have all the energy and some have none. (Margenau [Reality], p. 281.)

Many, if not most, versions of the uniformity of nature principle concern the amount of extensional, statistical uniformity in the universe. This is the case, for example, with Carnap's version ([Foundations], Sec. 41F; [Continuum], p. 66). It is not so in every case, however. Keynes interpreted "the Law of the Uniformity of Nature" to mean that "mere differences of position in time and space" are inductively irrelevant, i.e., that "*mere* position in time and space cannot possibly affect, as a determining cause, any other characters" ([Treatise], pp. 226, 248, 249, 255-56, 466). Of course there are close relations between the kind of uniformity of which Keynes speaks and extensional, statistical uniformity; but they are nevertheless distinct. Likewise our "Principle of the Uniformity of Nature," which is similar to Keynes's, does not concern directly the amount of extensional, statistical uniformity in the universe; rather, it states the temporal and spatial invariance of causal connections.

Let individual variables range over, and let individual constants designate, space-time regions, as before. We hereafter restrict the range of predicate variables to the kind of properties referred to in the Principle of Limited Variety (what we called "λ-properties"), so that the two presuppositions formulated in this section apply only to causal connections among such properties. Thus we interpret the causal universal "$(x)\,(\Phi x$ **npc** $\Psi x)$" to mean that a causal connection holds from the extensional symbolic property Φ to the extensional symbolic property Ψ for all space-time positions, and we interpret the substitution instance "Φb **npc** $\Psi\ b$" to mean that this causal connection holds at position b. Since the notion of causal connection is meaningful in the single case, it is logically possible that a certain causal connection should hold at one region but fail to hold at another; for example, "$GbLb$ **npc** $Eb \cdot \sim (GcLc$ **npc** $Ec)$" is logically consistent. Our uniformity of nature presupposition is designed to exclude this by requiring uniformity of space-time with regard to what causal connections hold.

Our *Principle of the Uniformity of Nature* is: If one substitution instance of a causal universal is true, then that causal universal is true. It may be alternatively stated as: Whatever causal connections hold in one region of space-time hold in all regions

of space-time. (It is worth emphasizing that to say the causal connection from Φ to Ψ holds at b is not to imply that Φ is exemplified at b, but only that if Φ should be exemplified at b then Ψ would be exemplified at b also). By an application of this principle one can infer from "$GbLb$ **npc** Eb" to "(x) $(GxLx$ **npc** $Ex)$," and hence via the rule of specification to "$GcLc$ **npc** Ec." Note that the proposition derived from the Principle of the Uniformity of Nature by replacing the modal implication "**npc**" by material implication is false; an inference from "$GbLb \supset Eb$" to "(x) $(GxLx \supset Ex)$" is, of course, illegitimate. Finally, it should be mentioned that the above principle needs generalization beyond the cases we have been considering. The basic idea governing the generalization is that whatever causally necessary connections there may be in the universe are invariant with respect to space-time.

We remarked earlier (Section 2) that a dispositional statement involves a causal modality implicitly and hence that a disposition is a modal property. Now a thing may change its dispositional properties (e.g., one substance may be transmuted into another which has different dispositions), and when it does so there is a change involving a causal modality. It must be considered whether such changes are in violation of the uniformity principle just formulated. However, a careful analysis of the situation shows that the change of causal modality accompanying a change of disposition is not in conflict with this principle (Burks [Dispositions], Sec. 3).

Because of its implicational form our Principle of the Uniformity of Nature does not imply that there are any true causal universals or true substitution instances of causal universals. It is compatible with a complete absence of causal connections and also compatible with any degree of extensional, statistical uniformity. Since it seems to us that the standard inductive method presupposes that there are some causal connections in the universe, we must formulate a presupposition to this effect. It is called the *Principle of the Existence of Causal Connections* and states that there is a region of space-time b such that some statements of the form "Φb **npc** Ψb" are true. It may be alternatively stated as: There is a region of space-time in which some causal con-

nections hold. As is the case with our uniformity presupposition, this one is only a first approximation to what is needed. For example, something quantitative needs to be stipulated about the ratio of actual causal connections to possible causal connections, so that the probability values resulting from an explicit use of the presuppositions in inductive arguments will be approximately those of the standard inductive method. However, the presupposition theory is so far away from this quantitative state that it would be premature to attempt to incorporate this condition here.

This last presupposition was developed out of Keynes's Inductive Hypothesis, as was the Principle of Limited Variety (see Section 3). The Inductive Hypothesis stipulates that the possible characteristics of an object "cohere together in groups of invariable connection, which are finite in number." There are three basic differences between this statement and our Principle of the Existence of Causal Connections. The first and most important is that we replace the Humean phrase "invariable connection" by "causal connection," where the latter is used in the causally modal sense defined in Section 2. Since every causal universal implies a corresponding material universal, the stipulation that there are universal causal connections entails that there are invariable connections: but we want the presupposition explicitly to postulate the stronger, causally modal condition. Second, in the presence of our Principle of the Uniformity of Nature it is not necessary to stipulate that there are true causal universals but only true substitution instances thereof.

The third difference between our formulation and Keynes's is that we make it explicit that the characteristics related by a causal connection need not occur simultaneously in time and at the same spatial position. (We write "Φa **npc** Ψa" even when the occurrence of Ψ follows the occurrence of Φ, but this is only for the sake of simplicity.) Most causal laws concern causes and effects that occur at different times and places, and to account for these it seems necessary to presuppose that there are some causal connections of this sort. Accordingly, we include this requirement as part of the Principle of the Existence of Causal Connections. In this respect the principle goes beyond older

postulates concerning the existence of Natural Kinds. A Natural Kind results from causal connections between properties of the same substance occurring simultaneously. Our presupposition covers such causal connections also, but it is not limited to these.

Though the Principle of the Uniformity of Nature is compatible with the existence of an arbitrary amount of extensional, statistical uniformity in the universe, such is not the case with the conjunction of this principle and the Principle of the Existence of Causal Connections. For each causal connection that holds throughout space-time places a limitation on the possible variety of the universe; for example, if "$(x)\,(\Phi x$ **npc** $\Psi x)$" is true, no instance of "$\Phi x. \sim \Psi x$" is true. Hence the two presuppositions together rule out certain logically possible universes, e.g., a universe in which every logically possible combination of properties was exemplified, and require that the universe have a certain minimal amount of statistical, extensional uniformity. It might seem that this result is incompatible with the unconfirmable character of the presuppositions, on the ground that one could establish empirically that the universe had less than this minimal amount of statistical, extensional uniformity. However, all that one can establish by direct observation is that a small region of the universe has a certain amount of uniformity with respect to a few observable qualities; and to go beyond this and make an empirical determination of the amount of statistical, extensional uniformity in the whole universe one must employ induction and hence assume the presuppositions.

We wish finally to relate the two presuppositions of this section to determinism. There are many principles of determinism which might be considered: the doctrine that the immediate past determines the future, the proposition that the complete past determines the future, the view that the state of the universe at a given time determines both the past and the future, etc.; the first two are compatible with a bona fide plurality of causes, while the third is not. We will consider only the first kind, though the results of our discussion can easily be applied to the other varieties. (Also, we will not take into account the fact, established by relativity theory, that space and time cannot be divided absolutely in the way determinists have traditionally assumed.) This doctrine was formulated by Laplace and was widely accepted

during the nineteenth century. Roughly stated, it is that (for any time t) a complete description of the state of the universe at t and a complete statement of the laws of nature deductively imply a complete description of the state of the universe at time $t + 1$.

Our task is to formulate this principle more precisely. We will do so by means of the causal modalities. Our *Principle of Determinism* is: A complete description of the state of the universe at time t plus a complete statement of the causal laws governing the universe (true causal universals) deductively imply a complete description of the universe at time $t + 1$. It is understood that the only properties referred to in the descriptions and causal universals are what we called λ-properties (Section 3), and that the completeness conditions hold only with regard to these properties; cf. the corresponding restriction with regard to our three presuppositions. Our Principle of Determinism implies the conjunction of the Principle of the Uniformity of Nature and the Principle of the Existence of Causal Connections; but it is not implied by this conjunction because the Principle of the Existence of Causal Connections requires only that the occurrences of some (not all) events be governed by causal connections. We do not take the Principle of Determinism as a presupposition since it is a stronger assertion than is needed for the foundations of induction.

5. The Presupposition Theory and Knowledge of Factual Statements

We have been mainly concerned in this paper with the presuppositions for inductive arguments to causal universals. This particular problem is part of a wider problem of the role of presuppositions in factual knowledge generally, and it is desirable that we discuss this wider problem before considering the roles our three presuppositions play in induction. The presupposition theory attempts to explain indirect or probabilistic knowledge of factual statements in terms of direct knowledge of factual statements and the assumptions of presuppositions (Burks [Presupposition Theory], p. 192). Since our knowledge of the truth of

sense-data statements [10] is more direct in a certain sense than our knowledge of statements about physical events, we must switch our attention for the present from the latter to the former.

We need to specify more precisely the sense in which sense-data statements can be known directly and with certainty. Of course people do believe false sense-data statements. I may have erroneous beliefs about someone else's experiences, and even about my own past and future experiences; thus whatever certainty our knowledge of sense-data statements may possess is private and fleeting. Moreover, there is a possibility of linguistic error and error due to vagueness even when one is having the experience he is reporting. Hence the "incorrigibility" of sense-data statements amounts to something like this: In the absence of various kinds of error, such as linguistic error and error due to vagueness, there are circumstances under which sense-data statements can be certified by an observer to have a probability of zero or one, i.e., can be directly verified. Though this kind of "incorrigibility" is qualified it is nevertheless epistemologically important, because it is not possessed by all factual statements. Thus our knowledge of the truth of a statement about "directly observable" physical events is subject to all the sources of uncertainty and error to which our knowledge of a sense-datum statement is subject, plus the additional sources of error and uncertainty implicit in the probabilistic relations obtaining between sense-data statements and such physical-event statements. Since it is precisely these additional sources of error which are being analyzed by a set of presuppositions designed for inductive inferences from sense-data statements to physical-event statements, it is legitimate in such an enterprise to take sense-data statements as knowable in certain circumstances with certitude.

An alternative way of stating the point just made is to say

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[10] We do not intend our use of the phrase "sense-datum statement" to connote a commitment to any particular theory of perception: "sense-data" theories, percept theories, and theories of appearing are alternative theories about the subject-matter of what we call "sense-data statements." What is important for present purposes is the theory that we can in some circumstances know the truth of such statements directly and with certainty.

that the problem we are considering is an idealized and simplified one. Another place at which most theories of induction make a similar idealization is worth noting. In the usual calculus of probability the probability of a logical truth is unity. Yet in the actual knowledge situation we do make errors concerning such statements, e.g., computational errors, and hence our knowledge of them is uncertain. As C. S. Peirce once stated, [11] each time the truth of 24 times 33 equals 792 is checked there is a small probability of error; and since the truth-status of this statement has been checked only a finite number of times, there is a probability (albeit very small) that an error has been made in every case that this result 792 was arrived at, and hence there is a non-zero probability that 24 times 33 is not 792. Similarly one may speak of a person's verdict that a purported proof is valid as trustworthy or not very trustworthy. As a consequence of the neglect of linguistic and computational errors, error due to vagueness, and error in memory and records, the usual theories of induction (including the present one) provide no account of this use of "probability." It is reasonable to make this idealization, but on similar grounds it seems reasonable to neglect for the present various sources of error to which one's knowledge of a sense-datum statement is subject at the time one is sensing the datum referred to in the statement.

We return now to inductive inferences from sense-data statements to extensional physical-event statements. The presupposition theory accounts for our knowledge of the latter in terms of direct knowledge of the former together with the presuppositions assumed. These presuppositions probably include those we have formulated and others as well. Thus it seems necessary to presuppose that one's memories of past sense-data have a certain prima facie validity, since the sense-data statements directly verifiable at one time are not a sufficient basis for the degree of reliability our judgments about physical events do in fact have; cf. in this regard the role of Kant's transcendental unity of apperception in providing an element of permanence behind the flux of sensations.

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[11] Cf. Hume [Treatise], Bk. 1, pt. 4, Sec. 1.

In the preceding pages we have indicated briefly how the presupposition theory might explain our knowledge of extensional physical-event statements. Consider finally causal universals.[12] The presupposition theory accounts for our knowledge of these in terms of our knowledge of extensional physical-event statements and a set of presuppositions which includes the three we have formulated. Hence we are now ready to discuss in some detail how these three presuppositions function in inductive arguments to causal universals.

6. Some Comments on How the Presuppositions Function

Let p be the extensional premise of an induction by simple enumeration to a causal universal c and let x be the approximate probability value assigned to the pair c, p by the standard inductive method. According to the presupposition theory "$\mathbf{P}_p\ (c,\ p \cdot \Pi_s) = x$" is logically true, where Π_s is an adequate presuppositional statement for the standard inductive method. We have suggested three constituents of Π_s and our task is to indicate in a general way how they fulfill the function required of them. We will not attempt to do this quantitatively, but will instead use a partial and qualitative approach. Our basic mode of procedure will be that of Nicod ([Induction], pp. 266 ff.), adapted to the causally modal statements with which we are here concerned. That is, we will indicate how it might be shown, first, that the probability of the causal universal c relative to the presuppositions alone is a quantity epsilon which is neither zero nor one; and second, that the probability of c relative to p and the presuppositions is greater than epsilon.

Let b be the region referred to in the Principle of the Existence of Causal Connections, and consider a substitution instance "Φb **npc** Ψb" of a particular causal universal. According to the Principle of Limited Variety there are only finitely many logically independent extensional properties ingredient in causal connec-

[12] Note that if phenomenalism is false, extensional physical-event statements are not reducible to sense-data statements; and that if our thesis of the non-extensionality of the causal modalities is true, causal universals are not reducible to extensional physical-event statements.

tions that can hold at b. The Principle of the Existence of Causal Connections states that of these a certain proportion do in fact hold. By means of the Principle of the Uniformity of Nature we can extend these results from the space-time region b to all space-time: all three presuppositions together imply that there are only a finite number of causal universals to consider, and of these a non-zero fraction are true. Our problem is to show that the probability that "(x) $(\Phi x$ **npc** $\Psi x)$" is a member of the sub-group of true causal universals lies between zero and one. If we could justify the claim that, relative to the presuppositions, each causal universal under consideration is as likely to be in the group of true ones as any other causal universal, we would have the result we are looking for. It is clear that our three presuppositions do not suffice to justify this claim, or any similar claim that leads to the result we are looking for, and we must confess that we have not yet found a presuppositional statement which will do this. We have, however, some comments to make on the problem.

We will first note how Keynes could fill the gap just mentioned and why his solution will not work for us. Keynes does not explicitly deal with the problem, but he presumably would have handled it by means of the Principle of Indifference, saying that since we have no reason to expect one rather than another of the possible causal universals to be true, the probability that "(x) $(\Phi x$ **npc** $\Psi x)$" is true is just the ratio of the number of true causal universals to the total number of causal universals. However, there are a number of alternative rules for assigning probabilities here (e.g., more complex causal universals could be assigned lower probabilities than less complex ones), and not all of these lead to the desired results. Keynes no doubt thought that one of these rules is to be preferred on a priori or logical grounds, but this does not seem to us to be the case. Rather, we raise the same question here that we raised in connection with the three alternative inductive methods of Section 1: Is there any general proposition about the universe relative to which the use of a probability assignment made in accord with the given rule can be justified? The presupposition theory (in contrast to most other postulate theories) makes the strong claim that there

are sufficient presuppositions to determine that the standard inductive method is a better method to use than any of the alternatives. Hence it is committed to an affirmative answer to this question, i.e., to the existence of a presupposition corresponding to the above use of the Principle of Indifference. For this reason we cannot be satisfied with Keynes's solution of the problem.

Consequently, if no presupposition of the sort required can be found the presupposition theory must be abandoned. This consequence does not apply to other postulate theories, however, because these do not make so strong a claim as the presupposition theory makes, and hence they can accept some probability rules to which there correspond no presuppositions. We shall develop this point more fully, because it shows that the discussions of the present paper are of value even if the presupposition theory is false. Consider the following approach to the problem of explaining inductions to causal universals. We try to adapt Carnap's general technique ([Foundations], Appendix) for dealing with probability connections among extensional statements to our problem of explaining probability inferences from extensional propositions to causally modal propositions. For the case of a universe with a finite number of space-time regions, our three presuppositions together imply that there are only a finite number of possible [13] universes, in each of which a certain number of causal universals are true. We next seek an assignment of probability weights to these possible universes which results in the probability assignments made by the standard inductive method to inductions to causal universals. That is, we seek an assignment of a priori probabilities to the different possible universes determined by our presuppositions such that this assignment, together with the traditional rules of the calculus of probability, logically implies that the probability of c on p is x, where p is the extensional premise of an induction by simple enumeration to a causal universal c, and x is the approximate probability value assigned to the pair c, p by the standard inductive method.

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[13] This sense of possibility is narrower than logical possibility since our three presuppositions are factual statements; and it is broader than causal possibility, since what is causally possible must be in accord with causal law (i.e., the set of true causal universals).

This suggested procedure is similar to Carnap's procedure for reconstructing induction by simple enumeration (from extensional premises to extensional conclusion), but we are proposing that the technique be applied to non-extensional state-descriptions rather than to extensional state-descriptions, as he does. It is important to note here, however, that even if such an approach works this does not settle the question as to whether inductive inference rests on presuppositions; i.e., it does not settle the status of postulate theories in general. For when we use the probability values derived by this technique, i.e., the values determined by the standard inductive method, we seem to be presupposing our three principles. Thus if the Principle of Limited Variety is false there are infinitely many properties which are not taken account of by the standard inductive method, but which should be taken account of because they may enter into causal relations with the properties to which the standard inductive method is applied. Again, if the Principle of the Uniformity of Nature is false there are possible universes which our inductive arguments ignore; for we have assigned a zero probability to any universe in which, e.g., "Φa **npc** $\Psi a \cdot \sim (\Phi b$ **npc** $\Psi b)$" is true. Hence if these factual presuppositions were false, a theoretical question about the legitimacy of the standard inductive method could properly be raised (cf. Burks [Carnap's System], Sec. F).

Before we consider the problem of how extensional evidence can raise the probability of a causal universal's being true relative only to presuppositions, we have one more point to make about the problem of showing that this probability is neither zero nor one. The presuppositions that we have suggested for this purpose, though admittedly not fully adequate, are stronger than those proposed by Keynes, and we wish to comment on this difference. The difference has to do with the limitation on the amount and kind of variety imposed on the universe by each system. Keynes's Inductive Hypothesis permits the existence of an infinite number of distinct properties, while our Principle of Limited Variety does not. Thus Keynes speaks of a "limitation of independent variety" ([Treatise], p. 260) rather than simply of a limitation of variety. Keynes's view can be translated into our

terminology as follows. Consider a "causal universal" with an infinite number of predicates in the consequent, e.g., "$(x)(\Phi_1 x \; \Phi_2 x \ldots \Phi_n x$ **npc** $\Psi_1 x \; \Psi_2 x \ldots)$"; let us say that each Φ_i and each Ψ_i is referred to by this causal universal. (If this causal universal is true then there is a causal connection holding throughout the universe from the properties $\Phi_1, \ldots, \Phi_n$ to the properties $\Psi_1, \Psi_2, \ldots .$) Put in these terms, Keynes's view is that there may be an infinite number of distinct properties, but the number of distinct true causal universals is finite and every property is referred to by some true causal universal. [14]

We shall indicate why we make a stronger assumption at this point than does Keynes. [15] We take as an example a specific causal universal "(x) $(\Phi x$ **npc** $\Psi x)$" concerning which we have made some observations "$\Phi a \supset \Psi a$," "$\Phi b \supset \Psi b$," etc. Keynes's assumption implies that Φ and Ψ are each referred to by at least one true causal universal; now they might both be referred to by the same true causal universal, and this might in fact be "(x) $(\Phi x$ **npc** $\Psi x)$." But what our presuppositions need to tell us at this stage is something different, namely, what ground there is for believing that the particular causal universal "(x) $(\Phi x$ **npc** $\Psi x)$" is true. If there are infinitely many distinct properties to consider, there are infinitely many different causal universals to consider; and if only finitely many of these are true, infinitely many causal universals are false. If we use the Principle of Indifference here in the way indicated earlier, the probability that "(x) $(\Phi x$ **npc** $\Psi x)$" is a member of the class of true causal universals is the ratio of the number of members of this class to the total number of causal universals under consideration; since the

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[14] The set of properties referred to by a true causal universal constitutes what Keynes calls a "group," and the set of properties referred to by the antecedent of a true causal universal constitutes the sub-class of the group which is an "infallible" symptom of the occurrence of the other members of the group (Keynes [Treatise], p. 252). Keynes nowhere states that every such group must have at least two members, or that every such sub-class is non-null. The occurrence of a property which was the only member of its group would not have a cause. Because of this and reasons similar to those given in Section 4, Keynes's Inductive Hypothesis does not seem to imply determinism.

[15] Our assumption here is closer to Carnap's ([Foundations], p. 74) than to Keynes's.

first number is finite and the second is infinite, this ratio is zero. Hence Keynes's assumption is not strong enough (even granting this use of the Principle of Indifference) to imply that there is a non-zero probability that this particular causal universal "(x) $(\Phi x$ **npc** $\Psi x)$" is true. It should be noted in this connection that Keynes's limitation of independent variety is a limitation of extensional randomness, and hence is a requirement that there be a certain minimal extensional uniformity in the universe. We also make this requirement (see Section 4), but we find it necessary to limit non-independent variety as well.

We turn now to the question of the bearing of empirical observations on the probability status of a causal universal, first showing the inadequacy of the theory of eliminative induction to solve our problem. The causal universal "(x) $(\Phi x$ **npc** $\Psi x)$" can be disverified, of course, by an observation of the form "$\Phi x. \sim \Psi x$," and if it had a non-zero probability before this observation the probability of the disjunction of the remaining (non-falsified) causal universals is thereby raised. But this suggestion does not solve the problem of confirmation: we need to know that the eliminated causal universal had a non-zero probability before the observation, and we need to know how the increase of probability is to be distributed among the alternatives remaining after the observation (cf. Nicod [Induction], pp. 222 ff.). It might be thought that all false causal universals could be eliminated by this technique, so that ultimately only the true ones would remain. But there may be false causal universals which may never be eliminated by this technique because the corresponding material universals are true. Thus the boundary conditions of the universe at a given time might be such that "(x) $(\Phi x \supset \Psi x)$" is true even though "(x) $(\Phi x$ **npc** $\Psi x)$" is false; in this case there would in fact be no counter instance "$\Phi x. \sim \Psi x$" even though it is causally possible that there might have been. Even if we assume that there are no such cases, the problem remains of accounting for the possibility of confirming a causal universal when there are still several alternative causal universals under consideration. Finally, quantitative causal theories of science cannot in general be conclusively refuted (Burks [Justification], Sec. III); and hence even if the eliminative technique worked for the idealized

qualitative problem we are considering, this technique could probably not be generalized to provide a solution for the broader problem of inductive arguments to causally necessary quantitative scientific theories.

Our problem, then, is to indicate how the empirical, extensional observations "$\Phi a \supset \Psi a$," "$\Phi b \supset \Psi b$," etc., raise the probability of the causal universal "$(x)(\Phi x$ **npc** $\Psi x)$" above the probability it has relative to the presuppositions alone. We note first that by the Principle of the Uniformity of Nature all the substitution instances of "(x) $(\Phi x$ **npc** $\Psi x)$" are true or false together, so that insofar as "$\Phi a \supset \Psi a$" confirms "Φa **npc** Ψa," "$\Phi b \supset \Psi b$" confirms "Φb **npc** Ψb," etc., "$\Phi a \supset \Psi a$," "$\Phi b \supset \Psi b$," etc., all contribute to the confirmation of "(x) $(\Phi x$ **npc** $\Psi x)$." There are two cases, according to whether the causal universal is true or false, and we must consider the probability of the observation statement's being true relative to each of these alternatives. The probability that "$\Phi a \supset \Psi a$" relative to "(x) $(\Phi x$ **npc** $\Psi x)$" is, of course, one, since the causal universal deductively implies the observation statement. Consider now the probability of "$\Phi a \supset \Psi a$" relative to "$\sim (x)$ $(\Phi x$ **npc** $\Psi x)$." If (x) $(\Phi x$ **npc** $\Psi x)$" is false, there are causally possible universes in which "$\Phi a \supset \Psi a$" is false as well as causally possible universes in which "$\Phi a \supset \Psi a$" is true. At this point we face a problem similar to that we met in the first part of this section: we need some presupposition which will justify our assigning probabilities to these various causally possible states of the universe in such a way that some universes in which "$\Phi a \supset \Psi a$" are false have a non-zero probability assigned to them. If we had such a presupposition, the probability of "$\Phi a \supset \Psi a$" relative to "$\sim (x)$ $(\Phi x$ **npc** $\Psi x)$" and the presuppositions would be less than one.

The next step would be to apply Bayes's theorem in the manner suggested by Nicod ([Introduction], p. 267). Let p be the premise of an induction by simple enumeration to a causal universal c. We have indicated how the following might be shown to be truths of logic: first, $\mathbf{P}_p\ (c, \Pi_s)$ is a quantity epsilon that is neither zero nor one; second, $\mathbf{P}_p\ (p, c \cdot \Pi_s)$ is greater than $\mathbf{P}_p\ (p, \sim c \cdot \Pi_s)$ which is not zero. By Bayes's theorem the conclusion follows from these that $\mathbf{P}_p\ (c, p \cdot \Pi_s)$ is greater than

epsilon. In other words, the verification of the premise p raises the probability of the conclusion c, in conformity with the pattern of an induction by simple enumeration to a causal universal—which is the result we are looking for.

It is worth noting in conclusion that in the foregoing arguments we made use of all three of our presuppositions. Presuppositional statements for the alternative inductive methods would include some, but not all of them. All the inductive methods seem to presuppose the Principle of Limited Variety. On the other hand, while the random predictive method seems to presuppose the Principle of the Uniformity of Nature, the inverse inductive method does not. Thus the random predictive method assigns the same probability to a statement about a given space-time region relative to another statement about this region no matter what particular region is referred to; this invariance of probability values is in conformity with the Principle of the Uniformity of Nature. In contrast, one general conception of the universe underlying the inverse inductive method involves causal connections that reverse with time. To explain this conception briefly we consider a single sequence of events all of which occur at the same spatial position. Let us suppose that all causal connections reverse periodically, that is, "Φx **npc** Ψx" is true for a time, then "Φx **npc** $\sim \Psi x$" is true for a period, "Φx **npc** Ψx" is true again, etc. This assumption is of course incompatible with the Principle of the Uniformity of Nature. In such a universe the more often Ψ has accompanied Φ the more likely it is that there is a causal connection from Φ to Ψ holding at the times under observation; but since by our assumptions this causal connection will at some time reverse, the more often Ψ has accompanied Φ the more likely it is that the next occurrence of Φ will not be accompanied by Ψ.

This concludes our discussion of how the three presuppositions specified earlier fulfill the function required of them by the presupposition theory. The discussion has been quite tentative and programmatic. We have found, for example, that the three presuppositions will not suffice, and that there are difficulties in formulating additional ones to fill the gaps. We feel justified nevertheless in presenting this discussion, despite its inconclusive-

ness, because it seems to us that there is no adequate solution of the problem we are concerned with, i.e., the problem of fitting the causal modalities into a scheme of inductive inference. For with the exception of Keynes's theory, which constitutes the basis of the speculations of the present paper, no previous philosophic theory of induction adequately accounts for both the probabilistic and the causally modal features of inductive arguments to causal universals. C. S. Peirce advanced a theory about the causally modal character of scientific laws: he held that such laws concern "would-be's" or Thirds, and that Thirds are not reducible to what actually happens (Seconds); this theory is very close to our thesis of the non-extensionality of the causal modalities. But though Peirce wrote much on probability, and even took some account of "would-be's" in his later theory of probability (Burks [Peirce], pp. 49 ff.), he never directly faced the problem of how extensional statements can constitute evidence for non-extensional statements. Theories of eliminative induction can be used to explain how false causal universals may be rejected, but as we have indicated, the mechanism of eliminative induction is not adequate to account for the probabilistic aspect of inductive arguments. Finally, most contemporary theories of inductive probability completely ignore this problem, or else assume with little or no evidence that causally modal propositions can be reduced to extensional ones.

7. Some Comments on Keynes's Theory of Induction

Despite the fact our three presuppositions are based on Keynes's Inductive Hypothesis and Law of the Uniformity of Nature and our account of the role the presuppositions play in induction is based on his work, our presupposition theory of induction is quite different from, indeed incompatible with, Keynes's theory of induction. Since we have borrowed so heavily from Keynes, it is appropriate that we comment on this difference.

The fundamental difference concerns the epistemological status of an inductive (as contrasted to a frequency) probability statement of the form

(II) probability $(h, e) = x$.

According to Keynes this is an a priori statement. While Keynes is not entirely explicit on the point, a good case can be made for his holding that (II) is synthetic a priori. In contrast, according to the presupposition theory, (II) is to be analyzed into the conjunctive statement

(III) $\mathbf{P}_p\ (h,\ e \cdot \mathrm{II}_s) = x \cdot \mathrm{II}_s$,

in which the first conjunct is analytic a priori and the second conjunct is synthetic (factual). Thus we agree that probability statements have both synthetic and a priori aspects, but we deny that the same proposition is both synthetic and a priori.

Most of Keynes's discussion of the assumptions underlying induction occur in Chapter XXII of [Treatise]. In Sections 1 through 12 he formulates his Inductive Hypothesis, a Law of the Uniformity of Nature, and a principle concerning the plurality of causes. Further, he argues that if we assume "a finite *a priori* probability in favour of the Inductive Hypothesis" (p. 260) and assume also "that a finite probability always exists that there is *not*, in any given case, a plurality of causes" (p. 257), then we can justify induction and analogy (in our terminology, the standard inductive method). It is this part of Keynes's work that we have made use of.

Keynes does not say that we need to assume a finite probability in favor of his Law of the Uniformity of Nature to justify induction, but he seems to make this assumption in his justification (p. 256) and it is consonant with his account to make it.

In the last two Sections (13, 14) of Chapter XXII (and at a few other places, e.g., pp. 255-56) Keynes discusses the question: Can these assumptions be justified? It should be noted that in this context this is equivalent to the question which Hume raised and answered in the negative: Can induction be justified? Keynes admits that he has no satisfactory answer to the question but he seems to feel that these assumptions can be justified; it is important in this connection that the title of the chapter is "The Justification of these Methods." Concerning the question as to how they are to be justified Keynes suggests that they are established by "direct knowledge about empirical entities which goes beyond a mere expression of our understanding or sensation

of them" (p. 263), where "direct knowledge" is contrasted with knowledge based on experience (p. 256). I think it is plausible to interpret Keynes as saying here that these assumptions are synthetic a priori. Because he does not say so explicitly, and because he says little on the subject, it is worth noting that the belief in synthetic a priori propositions fits in well with his philosophical background. His thesis that probability is an indefinable relation between propositions (p. 8) was probably stimulated by G. E. Moore's thesis that good is an indefinable property (Harrod [Keynes], p. 652), and though Moore never explicitly says that there are synthetic a priori propositions about good, it is plausible to interpret what he says in this way.

Keynes does not discuss the foundational role of his Inductive Hypothesis in induction in the light of his synthetic a priori epistemology. We will suggest a theory which deals with these matters and which is a plausible extension of what Keynes had in mind. Consider the statements:

(1) "There is a finite probability in favor of the Inductive Hypothesis,"

(2) "There is a finite probability in favor of the Law of the Uniformity of Nature";

also, for each possible event a statement of the form

(3) "There is a finite probability that this event has a single cause,"

and for each causal universal a statement of the form

(4) "There is a finite probability that this causal universal is true." [16]

Our suggested extension of Keynes's view is that these statements, as well as all statements of the form of (II) in which x is the value assigned by the standard inductive method to the pair h, e, are synthetic a priori true, and that the basic assumptions of induction play the following foundational role in this set of synthetic a priori probability statements: from (1), (2), (3), and (4) as axioms, together with the machinery of the traditional

[16] For the reason for including (4) in this list see pp. 597-601 above. A further principle would be needed to handle the problem raised on p. 602 above.

calculus of probability, all other true inductive probability statements follows. Keynes needs some such axioms as (1) through (4) because the set of axioms he does specify are insufficient to determine the truth status of any single probability statement of the form of (II) (Carnap [Foundations], p. 344).

To complete our reconstruction of Keynes's view we need to make one final suggestion. Keynes rightly saw that he could not justify a belief in the Inductive Hypothesis but at most a belief that it is probably true, and similarly for the other assumptions of induction. We have framed (1) through (3) accordingly, but a problem arises here. Keynes always describes probability as a relation between two propositions. Yet in his discussion of the assumption that there is a finite probability in favor of the Inductive Hypothesis he mentions no proposition relative to which this probability exists, and indeed his use of the word "assumption" and the phrase "a priori probability" (p. 260) suggests that he had no such proposition in mind. A similar point can be made concerning his discussion of the plurality of causes. How, then, are we to interpret (1) through (4)? We suggest two alternatives. The first is to accept the existence of non-relative probabilities, at least in these cases. The second is to hold that the probabilities are, at least in these cases, relative to the kind of "direct knowledge about empirical entities" which Keynes suggests we have in the case of statements like (1) and (2) (pp. 263, 256). Either alternative is consonant with what Keynes says in [Treatise].

This concludes our suggested reconstruction of Keynes's view. It remains only to indicate briefly why we reject it. It is of course incomplete and qualitative rather than quantitative, but so is our own theory. Our objections are epistemological rather than technical. We have given elsewhere ([Presupposition Theory], Sec. 4, [Carnap's System], Sec. D4, E4) some arguments for the Humean position that any inductive argument to show that the use of the standard inductive method is as beneficial as the use of an alternative method is necessarily question-begging. Here we will apply these arguments to Keynes's attempted justification.

Let us imagine a hypothetical user of the random predictive

method who reasons as follows. He formulates assumptions for his method (see Section 6) and expresses them in the way we have expressed Keynes's assumptions in (1) through (4). He maintains that his assumptions are synthetic a priori true, and that all statements of the form (II) in which x is the value assigned by the random predictive method to the pair h, e are also synthetic a priori true. Finally, he claims to establish that these synthetic a priori propositions (which are, of course, incompatible with Keynes's) are true by "direct knowledge of empirical entities," to use Keynes's own phrase. It seems to me that this hypothetical position is as plausible as Keynes's philosophy of induction. This may be, of course, because I am deficient in direct insight, but where such an issue is involved philosophy cannot rise much above the autobiographical. The most we can do is introspect our own experience to see what we can find, keeping in mind all of the theoretical considerations known to us that are relevant. In this connection it should be noted that we know of one result relevant to our problem which was not known to Keynes, namely, there are full and consistent formalizations of inductive methods other than the standard inductive method (Carnap [Foundations]); in Keynes's day these alternatives were at best vaguely conceived.

A second argument against Keynes's theory of induction is the following. As Kant saw, a synthetic a priori theory of induction needs to be supported by an epistemological and metaphysical structure. Keynes himself saw the need for a supporting epistemological theory here ([Treatise], p. 262). Kant erected such a structure, and while he did not take account of the probabilistic aspect of scientific knowledge as did Keynes, is seems to me that a similar type of philosophical system is required as a foundation for Keynes's theory of induction. We will refer to it is a reconstructed Kantian system. Such a system is, I think, subject to the same basic problem of justification that Keynes was trying to solve. The validity of induction in the reconstructed Kantian system depends on the fact that the transcendental ego (the transcendental unity of apperception) imposes a certain regular and uniform structure on all experience, and hence on all events in space and time. The transcendental ego transcends experience,

and therefore time and space; so that invariance or uniformity through temporal change cannot be meaningfully predicated of it, and hence the problem of justifying induction cannot be raised with regard to it. However, the problem of justification does arise in connection with the arguments needed to support the reconstructed Kantian system.

From the point of view of our present discussion the most important argument for accepting this reconstructed Kantian system is that it would explain the extensional uniformity and stability characteristic of phenomena. Now this characteristic could be explained in terms of an inductive method other than the standard inductive method; our hypothetical defender of the random predictive method would presumably explain it as an accidental feature of present experience, something unlikely to occur in the future. It seems to me that the only satisfactory answer to him is that the reconstructed Kantian system is trying to explain this feature of experience in terms of the standard inductive method, according to which it is not an accidental but a highly probable characteristic of experience. To put the point in Kant's terms: we should assume that science is possible and construct a philosophical system which will explain how it is possible (cf. [Presupposition Theory], fn. 7). Thus the argument we are considering supports the reconstructed Kantian system only by assuming that the standard inductive method is the correct method. Consequently any attempt to use this reconstructed Kantian system to justify induction would be circular. But if Keynes's attempted justification of induction requires the support of such a system, and it seems to me that it does, then this attempted justification must ultimately fail.

We remarked earlier that Keynes attempted to justify the proposition that the Inductive Hypothesis is probably true rather than the proposition that the Inductive Hypothesis is true because he recognized that the latter task is hopeless. But we have just concluded that the former justification will not work either, so the main motive for assuming that the presuppositions of induction are probably true, rather than the assumption that they are true, is gone. It would perhaps still be preferable to make the weaker assumption, but we have found no way of adequately

formulating it, because it seems to us that an adequate analysis of probability shows that this notion is relative to a presuppositional statement ([Presupposition Theory], Sec. 5). It is for this reason that we have formulated the presuppositions without the concept of probability in them. It should be emphasized that our motive here is not a rationalistic demand for certain or sure knowledge of factual statements. Indeed, the assumption of a presuppositional statement for the standard inductive method does not guarantee the actual predictive success of this method; for our presuppositions imply only that most phenomena are governed by causal laws, while from a given body of evidence all that we can obtain is a degree of probability$_p$ that we know what these laws are.

University of Michigan.

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NECESSITY IN HUME'S CAUSAL THEORY

LEONARD GREENBERG

The fame that Hume acquired from the doctrine that the connection between cause and effect is nothing more than a mental association has been exaggerated to a certain extent, in that that theory was not as radical a departure from the accepted theory of Hume's time as it appears to be at first sight. The doctrine was, of course, a drastic revision of the causal concept then current, and its point is still sharp in our day. But Hume, having whisked away "necessity" as it initially seemed, turned right around and re-installed necessity in all its original force in his new interpretation of the causal relation.

> . . . we . . . never penetrate so far into the essence and construction of bodies as to perceive the principle on which their mutual influence depends. It is their constant union alone with which we are acquainted; and it is from the constant union the necessity arises. If objects had not a uniform and regular conjunction with each other, we should never arrive at any idea of cause and effect; and even after all, the necessity which enters into that idea is nothing but a determination of the mind to pass from the object to its usual attendant, and infer the existence of one from the other. Here, then, are two particulars which we are to consider as essential to necessity, viz. the constant *union* and the *inference* of the mind; and wherever we discover these we must acknowledge a necessity. [1]

Thus, it appears that despite the fact that the only connection Hume leaves between cause and effect is a mental *habit*, he gives the habit all the force and certainty of the traditional idea of objective necessity. The above passage speaks of "matter" but the conclusions Hume draws in it he applies rigorously to the mental sphere as well. His position here departs not at all from the familiar determinist tenets regarding freedom of the will. "We may imagine we feel a liberty within ourselves, but a spectator can commonly infer our actions from motives and char-

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[1] David Hume, *A Treatise of Human Nature*, edited by L. A. Selby-Bigge (Oxford, 1888), p. 400.

acter; and even where he cannot, he concludes in general that he might, were he perfectly acquainted with every circumstance of our situation and temper . . . ." [2]

Thus the radical character of Hume's causal theory lies far more in its denial of *externality* to necessary causal connection than in any change he made in the character or status of the connection. It is obvious Hume did not mean his sceptical denial of the "reality" of the causal connection to imply that there is *no* association or connection between causes and effects. For to him the anarchy of chance, or "liberty," was the only alternative to the truth of causal necessity; and his own "habit" necessity is designed to account for the fact that the universe and human life are not in reality anarchic. [3] Yet in making causal connection a matter of mental association Hume came very close to subverting the idea of necessity despite himself. Had he developed his notion that necessity consists in the unopposable habit our minds form of passing from the idea of the cause to the idea of its effect, he might have seen that causal theory can be divested

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[2] *Treatise*, pp. 408-09. See pp. 399-412 for Hume's fuller discussion of this theme. A revised and amplified treatment of the question appears in the *Enquiry Concerning Human Understanding*, edited by L. A. Selby-Bigge, 2nd. Edition (Oxford, 1902), pp. 80-103.

[3] See *Enquiry*, pp. 73-96, passim. Hume makes it clear in these passages that he had no intention of disproving the idea of necessary connection in general; e.g., "One event follows another, but we never can observe any tie between them. They seem *conjoined*, but never *connected*. But as we can have no idea of anything which never appeared to our outward sense or inward sentiment, the necessary conclusion *seems* to be, that we have no idea of connexion or power at all . . . . But there still remains one method of avoiding this conclusion, and one source which we have not yet examined. When any natural object or event is presented, it is impossible . . . to discover, or even conjecture, without experience, what event will result from it . . . . But when one particular species of events has always, in all instances, been conjoined with another, we make no longer any scruple of foretelling one upon the appearance of the other . . . . We then call the one object *Cause*, the other *Effect*. We suppose that there is some connexion between them; some power in the one, by which it infallibly produces the other, and operates with the greatest certainty and strongest necessity" (pp. 74-75). Or again: "Let anyone *define* a cause, without comprehending, as a part of the definition, a *necessary connection* with its effect; and let him show distinctly the origin of the idea expressed by the definition, and I shall readily give up the whole controversy" (pp. 95-96).

altogether of the idea of necessity without loss of order and regularity on either the mental or physical levels. Even though he did not do so, Hume's idea of necessity based on habit seems a somewhat attenuated version of causal necessity, since habit is not an inexorable force, and past conjunctions of a given cause and its effect in our experience do not in the least imply that future conjunctions will be the same. For when we anticipate the issue of an effect similar to past effects because the cause is similar to past causes, it is only by a mental presumption that we do so, a "determination of the mind to pass from one object to its usual attendant." [4]

This attenuation of necessity in Hume's interpretation of the concept shows that despite his explicit and vigorous adherence to it he really was much closer to a non-necessitarian view of order and regularity than he thought. Nor did the attenuation of the concept in his hands stop with its reduction to an habitual sequence. Since the mind's habit of passing from one object to another is built up by experience, it takes time before the connection becomes "necessary" in Hume's sense of the term. But before the habit is built up we experience causes and effects without the help of habit, and therefore without the presence of any necessity between them. "The first instance has little or no force: the second makes some addition to it: the third becomes still more sensible; and it is by these slow steps that our judgment arrives at a full assurance." [5] In other words, non-necessary causal connections are conceivable, according to Hume, and, indeed, actually occur as a regular part of our experience.

The idea of necessity is designed to explain how it is that the universe is not a scene of chance and anarchy, but displays order and regularity in its structures and operations. For if no event or sequence of things need happen twice, the basis for our understanding of things, and for our expectations in even routine matters, is destroyed. Thus, if pushing a doorbell might result in an explosion rather than a buzz, or an object might fly upward when released from the hand, or biting into a sandwich set off

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[4] *Treatise*, p. 400.
[5] *Treatise*, p. 130.

a deep-toned melody of chimes, life would be too unreliable to be lived by humans; especially since these variant effects, in turn, would give way to others, on subsequent occasions; or so the determinists feel, Hume among them. * To account for the failure of this sort of thing to happen, the determinist says there is something in the relation between a given cause and its effect which ensures that the cause must always have one certain effect and no other; and calls this something "necessity." But consider the following: to say that fire is the cause of smoke is to say that $fire_1$ will cause $smoke_1$; $fire_2$ will cause $smoke_2$; $fire_3$ will cause $smoke_3$; and so on. In other words, although fire in general produces smoke in general, any individual cause or individual "operation" of a cause is limited to the production of one individual effect; the fact that fire produces smoke does not mean that one fire can produce more than one of the effects "smoke." Consequently any individual cause, *even without the intervention of "necessity,"* is unable *in principle* to produce a variety of effects. Therefore, if there is to be a variance of effect constituting "anarchy" or the rule of chance, it must come from at least *two* causes. $Fire_2$ may produce cold instead of heat, but the fact that no cause or operation of a cause can produce more than one effect alone ensures that $fire_1$ will not produce cold in addition to heat. It follows that the factor that ensures that no variance in effects of fire shall occur must be something that can "determine" the effects of *both* $fire_1$ and $fire_2$. For "heat" alone and "cold" alone are neither variant nor non-variant effects, variance being a phenomenon involving at least two effects. Thus, when "heat" has appeared from one fire, the question of the variance or invariance of the effects of the class of thing called "fire" is still open. If the next and subsequent fires produce heat, heat is an "invariant" effect of fire; if it produces cold, then the effects of fire are variant. Thus, nothing in the first fire, or the first fire's effect, or the first fire's connection with its effect, increases or decreases the variance or invariance of the effects of the cause "fire." There can be nothing in the relation between *one* cause and its effect which is capable of "determining" *two*

* See *Enquiry*, pp. 82-91.

effects. Any such relation would have to hold between one cause and another *cause* in order to be capable of such an influence; the first fire would have to be able to act upon the second fire in order to influence the variance or invariance that shows up with the latter. And no such cause-to-cause bond is posited in causal theory. Thus, because "necessary connection" is a factor qualifying the relation between *each* cause and that cause's *effect*, it cannot be the factor which prevents variance of the effects of causes for two related reasons: (1) as a single-cause connection it cannot determine the issue from two causes, and (2) as a cause-to-effect connection it cannot act from cause to cause. It does not matter how the causal relation is put; if the individual cause under consideration is held to "produce" its effect, it does not produce it in virtue of any quality or characteristic modifying its "production"; if it is held that it is "followed by" its effect, it is not followed by it in virtue of any quality or characteristic of the "following" involved. Now "necessity" is a quality or characteristic modifying the connection between a single cause and its effect. Consequently, it is as meaningless to say that necessity ensures that a given cause will always produce a given effect as it is to say that a single molecule can produce heat. For the necessity postulated is incapable even in principle of preventing variance of effect among causes.

Despite its incorporation of necessary connection, Hume's theory of causation is close enough to this conception to make further exploration of the relationship rewarding. It has already been shown that a non-necessary causal connection is a conceivable thing in Hume's theory, because we have to be educated to the mental habit by which we pass from cause to effect, during which time we experience causal conjunctions many times without perceiving or feeling any special connection between the cause and the effect. One of the consequences of this is that for Hume, too, necessary causal connection can only be derived from more than one cause, although the derivation is different from that based upon the multiple-cause basis of variance of effect. For Hume, repeated experiences of cause_1-effect_1 are required before the connection between the two becomes necessary; and this multiple-cause requirement is not the same as that which follows

from the idea that it takes at least two causes to make necessary connection predicable of one. Nevertheless, this need for non-necessary causal relations, for the purpose of building up necessary mental causal relations, is a point of kinship between Hume's theory and the variance-of-effect view given above; and the notion of constant conjunction of cause and effect, which is the foundation of Hume's "habit-necessity," reveals a broader kinship still. "We remember to have had frequent instances of the existence of one species of objects; and also remember, that the individuals of another species of objects have always attended them, and have existed in a regular order of contiguity and succession with regard to them. Thus we remember to have seen that species of object we call *flame*, and to have felt that species of sensation we call *heat*." [7]

This is the constant conjunction we are referring to. Now it is obvious that, in non-Humean terms, what Hume is expressing here is the thought that a *class* of causes consisting of the class of objects called "flame" has been constantly conjoined in the past with the class of sensations called "heat." I say "non-Humean" because the reality of classes was denied by Hume, one of his doctrines being that only particulars exist. But however it is expressed, the conception accords much more plausibly with the idea that the characteristic in virtue of which a cause "produces" a given effect cannot reside in the individual cause-effect relation, than with the idea that it does; even though Hume himself placed it in the individual cause-effect relation. [8] And we have

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[7] *Treatise*, p. 87.

[8] For Humean adumbrations of necessity as a class-of-causes, or multiple-cause phenomenon, see *Enquiry*, pp. 76 ff. Despite the suggestiveness of these indications, Hume's "habit-necessity" was explicitly an *individual* cause-effect relationship. "The first time a man saw the communication of motion by impulse, as by the shock of two billiard balls, he could not pronounce that the one event was *connected*, but only that it was *conjoined* with the other. After he has observed several instances of this nature, he then pronounces them to be *connected*. What alteration has happened to give rise to this new idea of *connexion*? Nothing but that he now *feels* these events to be *connected* in his imagination, and can readily foretell the existence of one from the appearance of the other. When we say, therefore, that *one object is connected with another* [italics mine], we mean only that they have acquired a connexion in our thought, and

seen that because of the multiple-cause source of variance and invariance of effects, eligibility to be the factor which accounts for or determines variance and invariance is restricted to something that is a class-characteristic rather than an individual cause characteristic. Had Hume allocated to the notion of "class" its proper role, he would have seen that the habit-necessity he was advocating suggests such a class-characteristic as the source of invariance more plausibly than it does an individual cause-effect relation. And of course, had he followed this line it would have turned out that his notion of necessity would have had to be abandoned altogether, because no *special* class-characteristic is needed to account for invariance of effect; the relation of class-membership alone is sufficient.

For in a proposition such as "all cats are light-footed," we do not feel that anything other than the ordinary class-membership relation is needed to enable every cat to possess the property, "light-footedness." The truth of the statement about the *class* is sufficient by itself to establish substantial invariance of class property. But in what respect does the situation differ when a class of causes of a given type is in question? "All fires are followed-by-smoke" means "all fires are somethings-which-are-followed-by-smoke." The property of being followed by smoke is a class-property in the same sense that "light-footed" is. And just as the truth of the statement that all cats are light-footed rests on the examination of cat after cat, until enough cats have been examined to give the generalisation a solid base, the repeated "being-followed-by-smoke" of fire after fire is sufficient to establish a regular and invariant association between fire and smoke, and this association we call "causing." No association of a special kind, either of the individual cause or of the class of causes, is needed. The only difference between the two types of class-property is that in the "cat" case it remains theoretically possible that a heavy-footed cat could exist, while there can be no such exceptional member of a class of causes. But this is merely a difference in *degree* between the two classes, not of kind. In

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gave rise to this inference, by which they become proofs of each other's existence . . ." (pp. 75-76).

saying that every cause always produces the same effect we are simply asserting that all classes of causes have perfect homogeneity. It will be seen how close this view is to Hume's concept of a mental association of causes and effects based on experience of *repeated pairings* of that cause and effect in the past. He need only have acknowledged the ideas of class and class-membership and his theory would have become a rendition in psychological terms of the same thought that the multiple-causes approach expresses.

But this is not the only sense in which Hume's causal theory touched upon a new insight into the nature of causality. A number of times in his speculations upon cause and scientific knowledge, Hume mentions "the secret operation of contrary causes." His position on this is well summarized in the passage:

> The vulgar, who take things according to their first appearance, attribute the uncertainty of events to such an uncertainty in causes as makes them often fail of their usual influence, though they meet with no obstacle nor impediment in their operation. But philosophers observing that almost in every part of nature there is contained a vast variety of springs and principles, which are hid, by reason of their minuteness or remoteness, find it is at least possible the contrariety of events may not proceed from any contingency in the cause, but from the secret operation of contrary causes. This possibility is converted into certainty by further observation, when they remark, that upon an exact scrutiny, a contrariety of effects always betrays a contrariety of causes, and proceeds from their mutual hindrance and opposition. [9]

But here again, Hume begins with an acute observation only to employ it in support of the troublesome phantom of necessary connection. For he concludes, merely, that since the *un*hindered cause would always result in its "usual influence," the association between cause and effect remains unbroken and necessary despite occasional failure due to interference by other causes. [10] Yet the notion of conflicting causes, like that of "habit-necessity," contains in it a subversion of the traditional doctrine of determinism far more radical than the one for which Hume is known.

Conflicting-cause situations present us with yet another

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[9] *Treatise*, p. 132.

[10] For a fuller discussion of this point see *Enquiry*, pp. 86-88.

ground for denying that there can be anything designatable as necessity, although in a different way from that of the multiple-cause approach. Even if the concept of necessity were not meaningless it could not play the role which Hume, and determinists in general, assign it. Let us suppose that an effect, "smoking a cigarette" is "hindered" from coming into being even though its cause, "desire for tobacco," is present; and that it is so hindered by a contrary cause and the latter's effect, "fear for health" and "abstention from tobacco," respectively. According to Hume the "defeat" of the "desire for tobacco" would not show that causal necessity does not exist, because even though its effect fails to appear, "desire for tobacco" in general still has an unbroken connection with "smoking a cigarette" in general, which remains necessary. For him, the unusual circumstances which prevent the effect from appearing in this instance make the instance an exception which proves the rule, rather than the rule's opposite. In support of this treatment of the question, there is the fact that the definition of a cause includes the requirement that it be *sufficient* to produce the effect, so that when the greater "strength" of a cause opposing a given cause results in the former's "victory," it may be that the latter can be said to have been insufficient, and therefore that it is not a cause at all.

In opposition to all such assertions stands one consideration which goes to show that there can be no such thing as causal necessity involved in a conflicting-cause situation. The factor which explains the victorious effect in a conflict of causes must be something which can determine the effects of at least two causes no less than the factor which explains invariance of effect. In the latter case the reason for this is that as it takes at least two causes to produce one variation in effect, no characteristic which qualifies the relation between only one cause and its effect can govern the variance or invariance of effects; in the conflict case now in question, however, the reason is that if there is such a thing as causal necessity, *each* of the causes in a causal conflict has a necessary relation to its effect, so that the only way in which the conflict can be resolved is by the stultification of one of the causal "necessities" involved, and only something other than causal necessity could stultify causal necessity. No such

force is posited in determinist doctrine, nor does it appear that any could be. For what "deeper necessity" *different* from the characteristics of ordinary necessity could a "higher type" of determinist necessity involve, which would enable it to dispose of the ordinary necessity obtaining between the "defeated" cause and its effect?

I have mentioned that it may be objected to this analysis of the conflicting-cause situation, that a defeated cause is not really a cause at all, because it has proven "insufficient" to produce its effect, while one of the requirements laid down in the definition of a cause is that it be not only necessary but sufficient for the production of its effect. But sufficiency interpreted in this way means that in order to be a cause, an entity must be "victorious" over other entities tending to produce contrary somethings, wherever it is confronted by them; for this is the only way in which it could always be "sufficient" to produce what it tends to produce. To say that an entity is sufficient only when it is victorious in its conflicts, however, is to say that in addition to tending to produce its own "effect," it must be able to suppress other effects, in order to qualify to be a cause. But the formal definition of cause is expressed in terms of its relation to its own effect, not of its relation to *two* effects. To require that it be able to suppress other effects is to imply that a cause's relation to its own effect is *in principle* insufficient to produce that effect, because "ability" to produce one effect is not in itself ability to suppress another. Since the law of cause and effect only calls for a "producing" ability, the kind of sufficiency that would give "victoriousness" to a cause is not a part of the formal definition of cause. To be the cause of a given effect, an entity need not have a relation to some other cause's effect in addition to its relation to its own. Therefore sufficiency in the proposed sense is invalid, and there can be no objection to the above analysis of causal conflicts on the ground that the sufficiency requirement has not been met.

Thus, causal conflicts are no mere exception to the rule, but reduce the determinist doctrine to the assertion that, "E_1 will happen tomorrow provided only E_1 is in-the-making today," which is as much as to say "E_1 will occur if E_1 occurs." For

only if the *unaccompanied* cause is present, may the appearance of its effect be predicted. There is no principle which enables us to predict which of two opposing effects will appear. Thus, the ultimate characteristic in virtue of which a cause is enabled to produce its usual effect doesn't lie in the cause or in anything within the cause, but in those conditions *external* to the cause which enable it to make its appearance unaccompanied by any other cause. For only if there is no conflict is the production of its effect certain; and only if it is unaccompanied by any other cause are we sure that there will be no conflict. This means that there is no "determination" in causal conflicts. Such conflicts are indeterminate *in principle*, not only in the sense that nothing that can be called "necessity" influences the result, but in the sense that as far as we know "chance" *does* influence the result.

Thus, Hume was no more fortunate in retaining the concept of necessity in conflicting-cause situations than he was in retaining it in his theory of "habit-necessity." His chief application of the doctrine occurs in his discussion of the concept of free will. The following passage may be selected as fairly typical: "The skin, pores, muscles, and nerves of a day-laborer are different from those of a man of quality: So are his sentiments, actions, and manners. The different stations of life influence the whole fabric, external and internal; and these different stations arise necessarily, because uniformly, from the necessary and uniform principles of human nature." [11] Like the passage on free-will quoted earlier this is essentially an allegation that human character or personality "determines" human conduct. But granting that this is so, it still does not follow that causal necessity is what *enables* character to determine conduct. For in its role as the determiner of human conduct, character would operate *too infallibly to be a cause*, hence could not owe its "victories" to causal necessity. The results of causal conflicts are in principle a matter of chance, and when we encounter "victories" which are not a matter of chance, therefore, this can only be because the "victor" encountered is not acting as a cause.

Thus, Hume's causal theory is even more remarkable for

[11] *Treatise*, p. 402.

what it did not do than for what it did. Having begun by appearing to overthrow the doctrine of necessity, he surprisingly retained it; and retained it in two aspects which would have given him even better ground for rejecting it than his original criticism of it did. Yet the fact that he radically changed the character of necessity even while retaining it, and that the two aspects under which he presented it in its new form were the very aspects which *could* have revealed the essential invalidity of the concept, shows the exciting quality of Hume's thought. He touched nothing, it sometimes appears, without opening up in it new aspects which cast a different light on the subject. He was, moreover, hampered by the necessity of by-passing as much as possible the notion of "class," because of the requirements of his metaphysical system. And as the explanation of invariance of effects and the role of necessity in causal conflicts both involve a shift from the level of individual causes to that of classes of causes, it is not surprising that his causal theory was crippled too much by that by-passing to do justice to its own potentialities.

Chicago, Illinois.

THE MEANING OF EXISTENCE

JAMES F. ANDERSON

Two English Benedictines have recently published a noteworthy study of the most fundamental problem of philosophy.[1] This work is authentic philosophizing, addressing itself to the meaning of the deepest realities of human experience; it is radically metaphysical in probing the significance of universal "being." Written in a style admirably simple, direct, and clear, this profound little book merits the sympathetic consideration of philosophers of all schools, although some—especially certain types of Thomists—will be inclined to reject it with impatience because of the unfavorable comments about "Thomism" which it contains. (Indeed one may feel that this "Thomist" foil, sometimes little more than rhetorical, could have been largely eliminated as an obstruction in the way of the authors' presentation of their own actual position.) The first part of the book, by Dom Mark Pontifex, is the chief part; the second part, by Dom Illtyd Trethowan, mainly consists of commentary—and brilliant commentary it often is—on the first part.

In answering his primary question, What is existence?, Dom Mark draws an equation between "assertibility," "existence," "being," and "reality": ". . . this assertibility is precisely what we mean by existence or being or reality" (p. 8). And "assertibility," I take it, implies and is really identified with intelligibility; for all being is "assertible" just because and in so far as it is intelligible. So far, so good. The real difficulty is in Dom Mark's identification of "existence" and "being": "The existence of X, Y, and Z simply is X, Y, and Z, but looked at as wholly dependent" (p. 21). And again: ". . . existence or being refers to every knowable object under that aspect which each has, of complete

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[1] Dom Mark Pontifex and Dom Illtyd Trethowan, *The Meaning of Existence—A Metaphysical Inquiry* (London and New York: Longmans, Green & Co., 1953).

dependence on a source from which they are derived" p. 22). It is quite clear that in this doctrine existence is not the act of a dependent being, whereby that being is; "existence" is that very being considered as dependent. Dom Mark has firmly grasped and well explained the character of the created existent, as such, but at the same time he has identified the created ("wholly dependent") existent with created existence—the creature, as such, with the creature's act of existence.

Now this distinction, between existent and existence, it seems to me, is a metaphysical fact. (This thing exists, but is not—unless it be God—its very own existence.) Therefore, if by "existence" we mean that *act* (there is no other correct word for it) by which a thing is, then it is simply a mistake to equate "existence" with "reality" or "being" in the sense of that-which-exists, save in God's case.

Of course sound philosophy, avoiding unreal abstractions and false separations, will keep close to concrete experience. The authors' insistence on these things is altogether laudable. Yet sound philosophy demands the recognition of real distinctions between some ultimate principles which are inseparably united in things. Such are the principles called "essence" and "existence." Dom Mark's criticism of this distinction is unexceptionable, I think, if the terms essence and existence are understood to refer to what he calls "elements"—quidditative ingredients, shall we say?— in the whole being: "If essence and existence are distinct, how can existence refer both to an element in the whole, and to the relation between that element and another element (essence)?" Dom Mark asks (p. 17). But these terms need not at all refer to "elements" in the sense indicated. And whatever may be said of some accounts of the matter, the fact (I take it) is that to be finite *is* to be composed of essence and existence, understood as the two ultimate principles of being, really distinct in all things save God, though inseparable one from the other; in others words, to be finite means to have existence without being that existence, namely, to have a limited existence, an existence limited by the nature or essence of the existent.

Now it is a central thesis of the present work that "existence"

or "being" or "reality" cannot be thought of independently of its Source, since to be is to be dependent on an independent Being. Seemingly this position is so conceived as to exclude any *intrinsic* analogy or proportion between the creature and God. Apparently, for Dom Mark, there is no intrinsic comparison between the latter on the ground of being, as such: ". . . the source of being has all dependent perfections, including knowledge, only in the sense that it has the power to give them, and is itself more perfect than any dependent being" (p. 37). As Dom Mark says: "The infinite cannot be said to have a higher degree of the kind of knowledge that we have, because even an infinite degree of such knowledge would be limited, since it would be an infinite degree of a finite perfection" (p. 38). True indeed; but the point is that knowledge is an *inherently* analogical or proportional perfection in the sense of being a quality which of itself is apt to be realized in diverse yet proportionally similar ways. But the thing of central significance, which the authors seem to miss, is, I believe, that being is absolutely prior to causality; so that while all finite being *is* dependent being, nevertheless to be finite is, first of all, to be composed of essence and existence; or, put negatively, to be finite is not to have a nature which *is* being. This, I think, expresses the root meaning of finite existence as such. Of course the fact remains that as an effect the finite being is that which depends totally upon the independent Being.

Consistent with the conception of being in terms primarily of causality is the theory of analogy which is advanced by Dom Mark, for he gives of that theory a primarily causal interpretation. He says, for example, that "If we wish to use the term person to describe God adequately we must use it in an analogical sense, that is, in such a way as to describe the cause which produces personality, and possesses it in a higher way" (p. 56). Certainly there is a causal analogy here, but the intrinsic analogy or proportion is prior.

Dom Mark goes on to say that "the analogical use of a term to apply to the infinite includes the univocal sense, for otherwise it would have a different meaning altogether" (ibid.). On the contrary, it seems to me that the analogical sense starts from and is based on the univocal sense, but does not formally include

it. This inclusion theory might be used to make analogy a kind of extended or expanded univocity—which, I submit, would be incorrect since there is, formally speaking, no core of univocal meaning remaining within properly analogical concepts. And the reason for this, as I see it, is that univocal concepts signify essences taken apart from existence—common natures or whatnesses lifted out of their actual existential contexts in order to be grasped or conceived in themselves; whereas properly analogical concepts essentially refer to existence, in some mode, and cannot be separated therefrom without being destroyed.

The doctrine that God possesses in a higher way that which He causes, is accepted and advocated by Dom Mark, yet he apparently fails to see that this doctrine implies acceptance of "analogy of proper proportionality" in regard to all perfections caused by God which are in their nature free of limitation—the perfections of being, unity, goodness, beauty, truth, etc. For Dom Mark quotes with approval the famous Thomistic dictum, that when we say "God is good," our meaning is not merely "God is the cause of goodness," but "what we call goodness in creatures pre-exists in God, and in a higher manner" (*Summa Theol.*, I, 13, 2). Yet Dom Mark seems not to realize that this text implies the intrinsic, *proportional* possession of goodness by creature and God; that it does in fact give us an instance of "analogy of proper proportionality"; for it clearly implies that God is good in His way just as the creature is good in its way. Indeed the causal analogy in the attribution of goodness to God as source of goodness is also clearly involved, but as secondary to the intrinsic analogy called proper proportionality.

It seems quite evident that Dom Mark's treatment of analogy from a primarily causal point of view results from his identifying our notion of finite existence with that of causal dependence or createdness. As we have already suggested, the notion of existence is prior to that of causation or causal dependency, although to be really is to be either a cause only (God) or a caused cause (creature). In short, causality is a prime perfection of being, flowing from being, but being is not causality, and hence is not analyzable primarily in terms of causality.

Having briefly presented his theory of metaphysical analogy,

Dom Mark returns to the problem of essence and existence. After quoting from Father Copleston's *History of Philosophy* some good statements concerning the doctrine of the "real distinction" between essence and existence, Dom Mark deals with certain difficulties which the doctrine, to his mind, presents. Now it seems to me that these difficulties, very clearly discerned and expressed by Dom Mark, are insuperable if the terms in which that doctrine is expressed are not themselves understood analogically. Thus, as Dom Mark well says, we cannot think of essence and existence as two "elements" of which things are "composed," the essence as "potential," and existence as a "separate element" "acting upon it" (pp. 64-65). We cannot, I should say, think here in these terms if they are not understood in properly analogical, or proportional, senses. For indeed essence and existence are not elements in the sense of being quidditative ingredients, nor are they distinct in the sense of implying separability, nor is the one a potential something which is acted upon, or actualized, by another separable thing or element called existence. In brief, it appears to me that the major source of Dom Mark's difficulty with the doctrine of the real distinction between essence and existence lies in his unawareness of the analogicity proper to the concepts involved and of the inadequacy of language to express their actual meanings.

In reality, however, this is not a case of a difficulty with a doctrine, but of missing a doctrine quite completely and of criticizing a radically different, and simply incompatible, doctrine in its stead. For Dom Mark does not, it seems to me, ever confront the sound doctrine of the real distinction between essence and existence. His denial of an "objective distinction between essence and existence in the dependent thing itself" (p. 74) appears to me entirely valid, on both historical and doctrinal grounds, in so far as this is a denial of an objective separability of "elements," in the sense previously indicated; but invalid, in so far as the denial is based on the identification of being (*ens*) and existence (*esse*).

Now "*Ens*," says Dom Mark, "is the existing thing, man or horse, without explicit analysis. Essence is the man or horse considered explicitly in itself, without explicit reference to its dependence on a cause. Existence or *esse* is the man or horse

considered explicitly as dependent for its existence, that is, for itself, on the cause, but without explicit reference to the man or horse in itself" (pp. 72-73). Undoubtedly these propositions express some of the fundamentals of Dom Mark's metaphysics (and presumably that of Dom Illtyd as well). Perhaps the contrast with what this writer holds can be made clear by rephrasing those propositions as follows. (1) *Ens* is the existing thing, man or horse, with explicit reference to its existence. (2) Essence (in the concrete, individual sense) is the man or horse considered explicitly in itself, or simply as such, without explicit reference to its existence. (3) Existence or *esse* is not the man or horse itself, but the act whereby the man or horse is or exists.

Some of Dom Mark's views concerning the real distinction between essence and existence find further expression in his discussion of act and potency: ". . . absolute dependence in the creature does not imply two distinct elements in it, potency and act. . . . This does not mean that potency and act are false ideas which do not truly express reality; it only means that they are inadequate, so far as they imply distinct elements" (p. 89). The concepts of act and potency do have for Dom Mark a certain validity: "We express reality in terms of act and potency, as though these were two principles of which things were composed. This is true, but inadequate" (p. 98). This last statement, along with others of similar character, seems to suggest a groping toward analogical concepts of *principle*, of *distinctness*, of *composition*, and so on, to harmonize with other analogical concepts of a more fundamental nature, namely, all the primary notions of metaphysics—*being*, *essence*, *existence*, *act*, *potency*, etc.

Dom Mark concludes his part of the book with a brief chapter entitled "The Ontological Argument," wherein he maintains that his analysis does not in one sense involve that "argument," because he does not start from a mere idea in the mind, but from consciousness of an existing thing. But "in another sense," he says, "it bears some resemblance to the ontological argument, because it maintains that every thought of reality, on analysis, includes a thought of the infinite as the source on which every real thing depends" (pp. 102-03). Now is this strictly true? At least it would appear to me more accurate to say that every thought of

reality contains an implicit reference to its infinite source. Indeed the latter may well be the actual meaning of Dom Mark, for he expressly agrees with what he calls "the Thomist theory" in stating that "the immediate object of our knowledge is the finite, but . . . we know this as effect, and know the infinite indirectly as cause" (p. 105). This seems to me correct. It is, however, difficult to discern any resemblance between this theory and the "ontological argument" as it is usually represented.

In this short account it is impossible to do justice to Part Two by Dom Illtyd Trethowan. A considerable amount of provocative thought is here compressed within a mere seventy pages. The brevity of the following remarks is not at all indicative of the value of the matter to which they refer.

Dom Illtyd claims that "it is inexact to say that 'existence' is 'conferred' upon creatures, because 'existence' *means* both God and creatures" (p. 124). Certainly one may agree that this first expression is "inexact," while holding that it can be understood in an unobjectionable sense. But is it true that "existence" *means* both God and creatures? On the contrary, does not existence mean God alone, in the sense that only He is the act which is His very own nature? In every other case, existence, to my mind, means the act whereby a thing is or exists, and never, except in God, does existence mean the being which exists.

Now Dom Illtyd goes on to say: "Surely, then, it is also inexact to say that creatures are 'causes.' The primary metaphysical datum is a causal relationship, and 'cause' cannot properly refer to our end of it" (ibid.).

Of course there is no question that the primacy in causality belongs to God, nor that creatures, as such, are effects of God's causality. But, as was previously remarked, being is absolutely prior to causality, or any causal relationship. Here again, as in Dom Mark's Part One, we find the analysis of being made primarily in terms of causality rather than of existence (*esse*).[3]

Dom Illtyd takes up the cudgels against those who pretend

[3] In a sense the history of metaphysical thought is the story of the analysis of being in terms of some other perfection of being than existence itself. On this point, see Etienne Gilson's *L'être et l'essence* (Paris, 1948), and *Being and Some Philosophers* (Toronto, 1949).

to be able to demonstrate the existence of God syllogistically. This, he says, is impossible, although God's existence can be "demonstrated" in the broad and literal sense of being "shown":

> God's existence can be not only known for certain but even shown . . . . The evidence for God's existence, in fact, cannot be denied without denying thought itself. All affirmation declares a necessity. It is the very notion of truth that it is something imposed on us from without as an absolute. And this character of absoluteness carries within its meaning all perfections, all the Divine Attributes. It is the same to say that "being" contains an implicit reference not only to this or that limited being but to pure Being. But we do not find pure Being by *arguing* from a vague notion labelled "analogical," using it as the middle term of a syllogism (pp. 136-37).

This passage is, I think. remarkable in its accuracy no less than in its depth. Let us wholeheartedly agree that we do not find God by arguing from an analogical notion which we use as the middle term of a syllogism; for it is only by reflection upon the already completed movement of the mind to God that we see this movement to have contained implicitly an analogical middle. But was this movement syllogistic? Dom Illtyd says it was not. No doubt it is true to remark that normally the mind's discovery of the existing God is not explicitly or formally syllogistic at all, but that by reflexive analysis it can be shown that the movement did in fact entail a syllogism whose demonstrative character (a posteriori indeed, not a priori) can be exhibited.

Concerning the doctrine of analogy (of whose central metaphysical importance both authors seem clearly aware), Dom Illtyd writes: "Our suggestion has been that the 'analogy of being' should refer not to any intrinsic community among beings but to the *relationship* in which the finite is dicovered to stand to the Infinite, a relationship which is *sui generis*" (p. 138).

Now this position seems to be entirely consistent with the analysis of being in terms primarily of causality; indeed it follows necessarily, I would say, from holding that "the primary metaphysical datum is a causal relationship" (p. 124). Yet it seems legitimate to ask how, if there be no "intrinsic community among [all] beings," there could possibly exist any relationship of finite to Infinite? The finite and the Infinite are, after all, beings, in

their own distinctive ways; which is to say that there is an "intrinsic (proportional) community" among them; and this *is* the all-embracing "analogy of being."

Marquette University.

BEING IN BECOMING: A THEORY OF HUMAN FREEDOM

NEWTON P. STALLKNECHT

In recent European philosophy we have seen the scholastic concepts of essence and existence, in various reinterpretations, once again occupying a central position both in speculative theory and in the phenomenology of our daily experience. [1] Some sense of this omnipresent relation is always with us as we come to self-consciousness and as we orient ourselves in our world. But we rarely interpret this situation very precisely in practical life; and when we attempt to do so difficulties multiply on every hand. We are often tempted to avoid these embarrassments by resorting to specious simplifications. So motivated, a student may summarize the essentialism, say, of Spinoza and the existentialism of a Sartre, in order to set in easy but too obvious contrast opposed interpretations of existence and essence. At first glance such opposition seems enlightening. We have, to put it very simply, libertarianism versus determinism, and a neat if drastic option seems available. For Sartre, finite human existence shapes its own essence: human nature is, briefly, what we make it. The existential *cogito* is, despite the shock of finding itself in a world and intimately entangled with the human body, its own master and even a sort of paradoxical *ens a se*. Here we are faced with a creative indeterminism, a transcendental subjectivism, "subjectivism" becoming once more an honorific term, whereby human choice and self-commitment actually create human nature and determine a "world" of fact and value, through a process of selective recognition. We may then put this philosophy, although somewhat arbitrarily, in diametric opposition to Spinoza's theory of man. Spinoza saw all transiency, including human action and passion, as dependent upon a fixed nature or order of things

[1] See especially Jules Chaix-Ruy, *Les dimensions de l'être et du temps* (Paris, E. Vitte, 1953), where these concepts are presented both systematically and historically.

from which all properties and events, including apparent accidents and contingencies, may be thought to follow. In such a scheme of things, human freedom is interpreted as an effective knowledge of our circumstances and causation. Self-creation, or self-causation, is reserved for God alone, if indeed even for him; and the proper attitude for finite man is that of enlightened acquiescence. Now, in both of the above interpretations essence appears as the direct object of a definition—as, properly speaking, a real *definiendum*—and existence as some sort of process or activity either exemplifying, perhaps "following from," the reality defined or, quite otherwise, actually creating it through the implications of our self-commitment which characterizes human nature. These extreme statements of freedom and necessity are hardly consistent with our sense of life and of action according to which freedom and necessity always qualify one another. Furthermore, this antithesis involves us in an extreme over-simplification that requires us to choose abruptly between essentialism and existentialism. After all, existence without or prior to essence is a puzzling concept, and on the other hand a determining essence prior to or "above" our actual decision, would seem to be a target ready-made for the exercise of Occam's razor.

To avoid this blunt and embarrassing alternative seems to be the goal of much recent philosophy—and especially of continental European thought. It becomes apparent at once that these problems cannot be separated from our experience and interpretation of process and duration, of time and change, and of our place within them. It is this consideration, recognized as the very heart of the matter, to which Professor Chaix-Ruy has turned his attention. He finds his central problem to be an ancient and recurring one, and he pays as much attention to Augustine and Pascal as to Bergson and Einstein. There results a panorama of Western thought apprehended from an unusual point of view. The detailed studies included are often fresh and penetrating and the whole argument is of absorbing interest. We may introduce this argument by indicating that at one point, although at one point only, Chaix-Ruy agrees completely with Sartre: the relation of essence to existence in human life is a unique one, quite different from that to be found elsewhere

among non-human or sub-human beings. This contrast involves a description of man's relation to time and to change. Human nature is subject to change, or better, man subjects himself to change. "*Chez nous l'essence est* in fieri" (p. 15). We are reminded of Sartre's "*Faire et en faisant se faire*," although, as we shall soon see, we need not think of the initiative as lying wholly with our existence, as opposed to our essence. After all, an existence capable of transforming essence must have a structure of its own and a *modus operandi*. Even the freest choice is "structured." This would seem to be true even if our creative self-realization in some way embraces or contains non-being.

But time and duration are by no means always a matrix of self-realization. Time may appear as a prison or booby-trap, as the ultimate condition of human frustration. "*At ego in tempora dissilui*" (p. 138). Man can lose himself in time, as Augustine knew, and forfeit the "authenticity" of his being by doing so. We are reminded of T. S. Eliot's lines in *Burnt Norton:*

> Time past and time future
> Allow but a little consciousness,
> To be conscious is not to be in time.[2]

The unexamined and undisciplined life of the dilettante or the worldling is distracted, even dismembered, by fears, regrets, and ambitions. It is scattered through the reaches of time, lacking even the autonomic quality of the Cyrenaic's *habeo non habeor* that clings to the *monochronos hedoné* of the present moment. In such distraction, past and future encroach upon our present. There is no moment of self-orientation, of resolution, or of dedication. There is only a "pursuit of interests"—one objective after another, a flux of apparent "ends," some of which appear as unrealized in a past of frustrations; others in a remote future. In such a life, there is no substantial evaluation

[2] Eliot's *Four Quartets*, of which *Burnt Norton* is the first, contain an interpretation of time and of man's relation to time that in many ways parallel Chaix-Ruy's argument. I have found comparison of the two very enlightening.

on the part of the individual and there often results an indifference or "power vacuum" of the spirit. Here is that

Inoperancy of the world of spirit

of which Eliot speaks,

> . . . while the world moves
> In appetency, on its metalled ways
> Of time past and time future.

Here we have only a *de facto* or (almost) a sub-human essence. Human character when so distracted and so dissipated lacks authenticity or genuine originality. Indeed, it lacks *substance* or self-directive stability.[3] Such a life is carried along or thrown about in a flux of events. It is so deeply involved therein that no lasting comprehension of another state of affairs is possible. For such an attitude, reality is made up of things and things of events, standing like points on a curve. But there remains a vast and fundamental difference between an event and a decision or a commitment. The moment of sincere and responsible decision is no ordinary natural event. It is not a moment *in* or *of* the flux; although of course relevant to the world of events, such decision "stands above" change even more clearly than veridical memory or prediction. It is not certainly to be included in the continuum of space-time, say, as a flash of light is included. The order of an "objective"[4] sequence open to perception must not be confused with the "time" of a moment of resolution. We may even say that they belong to different "levels of time." On the level of human commitment, volition stands as an active interpretation of past and future. Without this significance, it would lose its status as an act of resolution. It would remain merely an event. We might comment that in this sense an act of com-

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[3] We might add as an historical comment that Hume gives a fairly satisfactory account of such a pseudo-selfhood and that his philosophy—a world-view for those still deep in Plato's cave—presents, both as an epistemology and as a theory of value, an interpretation of things characteristic of one who, unlike Augustine, can *cheerfully* lose himself in time and find reason properly enough the "slave of the passions."

[4] "*Objectif*, c'est ce qui correspond à un objet réel et effectivement mesurable" (p. 126).

mitment stands, perhaps like the option described in Plato's Myth of Er, without or above a purely sequential time, i.e., time as apparent to those in the cave. But man is not meant for the cave. He is called upon to ascend from lower to higher levels since in the beginning his existence cannot escape inauthenticity: man is born in the cave, but in his ascent from the cave human nature takes shape, assuming an authenticity as it develops. Man is not born free but he is privileged to achieve a freedom of his own.

We may characterize M. Chaix-Ruy's more detailed interpretation of human freedom by translating two passages from the writings of Louis Lavelle, whom he quotes with approval (pp. 281 and 276): "Our essence is to be free;[5] liberty is the point of coincidence of essence and existence, the point where we penetrate existence by determining our own essence (*en nous donnant une essence*)" ("Analyse de l'Etre . . .," *Revue de Métaphysique*, 1947). "Essence cannot be distinct from our own act; it is this very act considered with reference to its highest possibility; we must achieve this possibility if our essence is to be genuinely our own, and we can never accomplish this except imperfectly. Even this requires of us an effort ever to be reaffirmed, that is, an *existence or a time* in which we act" (*Traité des Valeurs*, I, p. 289, italics added).

Here human essence and existence are made to stand in intimate relation that seems to render them internal to one another. Human existence is the effort, sustained in time, of which human essence is the complete significance or intention. So conceived, human essence is *in fieri*. Both society and the individual possess significant histories. But human essence is not a simple product of human effort; for without such essence effort would be no longer volitional effort, but mere reaction. In developing this position Chaix-Ruy argues that human freedom, or free action, may be described as manifesting three indispensable properties:

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[5] "To be free" is the essence of man. This is roughly equivalent to Lord Acton's "Freedom is the quality of man." It is not that man is always free in the sense that mammals are warm-blooded or vertebrate, but that he is "to be free." The infinitive is here not used as a simple future. Our statement is not a prediction. It is the statement of an essence, that may not be realized.

1) Determinate or "structured" choice. Choice is transitive, it is choice of something intelligible and of something feasible. 2) Reflection. Choice is not only transitive but reflexive. It involves recognition, present in the optative consciousness, that our responsible choice characterizes ourselves. What we call character is revealed and developed through the choices that we make. 3) Transcendence, which stands in apparent contrast with (2). Our choice, it is true, characterizes us but at the same time it may transform us, since in free action our essence stands *in fieri*.

At this point, we cannot fail to recognize that human essence is sharply to be contrasted with the essence, say, of a circle, a chemical element, a living plant, or of a particular artifact. Human essence is not a form, a pattern, or an enduring concretion; it is an activity, precariously maintaining itself whereby decision and commitment aim to realize and harmonize tendencies often in initial conflict. Such active essence is a structured becoming of the many toward the one, a *genesis eis ousian*, that must always renew itself or perish—such is the price of freedom.

In the development of his theory of freedom, Chaix-Ruy follows a number of his more congenial contemporaries. He seems almost to be attempting to construct a harmony of theories that avoid determinism, on the one hand, and an absolute existentialism on the other. Lavelle, Jaspers, Abbagnano, and Marcel are frequently cited, to say nothing of Pascal who appears almost as a contemporary. Chaix-Ruy summarizes his position as follows:

> We must look for the root of true freedom beneath the apparent surface of existence. The free act is that whereby, along with the event of our action in time, we perform, outside of phenomenal time . . . the act by which we constitue our essence. This takes place in real time where our destiny is set forth. What we call out character is only an image, seen through a glass, of this essence which is in perpetual generation.

Such activity does not involve a creation out of nothing. There is no

> . . . liberty without a structure determined by the free act, a structure which, in depth, seems to influence the essence itself. Again, there is no freedom if this structure opposes an invincible obstacle to further original activity. (pp. 287-88.)

He quotes from Thévenaz and Jaspers:

> Freedom is not that which renders the act possible or "releases" it. Being in the act itself, freedom is neither its origin not its cause, neither initiative nor absolute beginning. It is reflexiveness, or, if you will, the quality proper to a certain kind of action, namely reflexive action. (Thévenaz, quoted on p. 283.)
> In decision, I am aware of a freedom in which I decide not upon some thing or other, but upon myself. Such choice cannot be separated from my selfhood, I am the freedom of my choice. Simple choice distinguishes objects, freedom is choice of one's self (Jaspers, quoted on p. 297).

In action, we qualify ourselves by assuming responsibility. The self, to be sure, need answer only for those acts that it has made its own;[6] but with reference to these its being is "in question." Until put "in question," i.e., brought to recognize responsibility, we have a very imperfect notion of our freedom. Just as we become responsible "to" people, so we are free only in a context of companionship and community. There results an ethics of responsibility, i.e., an ethics based upon a consistency of expressed intention. An inconsistent response or answer is no answer and stands as a barrier between human beings. Such an ethics may in its application assume a Kantian aspect but its foundations seem to be broader and more humane. Free choice must be faithful to the principle that has rendered it possible.

There remains the concept of transcendence, perhaps best introduced by the statement, "Essence is at once the most authentic reality and the most perfect ideal" (p. 278). Through the affirmation of such essence self-consciousness transcends any *de facto* continuity of impressions and ideas. The self of decision and commitment transcends such "facts" of consciousness as substance transcends its accidents. Such transcendence is known to us not through an act of faith but as a matter of experience (p. 304). Indeed, we may be said to experience the emergence of the authentic or substantial soul that transcends the subject matter of an associationist or behavioristic psychology. Such a vision of

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[6] We may be reminded of Spengler's play upon the form taken by the perfect tense in European languages: *Ego habeo factum*, literally, "I possess the deed."

freedom presents us with problems not unlike those that Kant faced in the second Critique. The fact seems to be that the content of the lower and higher reaches of human experience can hardly be plotted consistently on one chart. This outcome presents us with a set of antinomies. These antinomies arise as a direct reflection of self-consciousness, when I appear to myself as a being *in the world, enjoying a particular or singular existence.* I am "in" a world that I "transcend." We have seen that our transcendence, which is inseparable from this existence, appears to us as a fact of experience, but on the other hand so do the events of the physical world with its determinism of space-time. To be sure, the reality, in the sense of the total environment to be reckoned with by the agencies of the human spirit, need not be limited to, let us say, the "permanent possibility of sensation" or even to a space-time manifold. Such reality is rather a permanent possibility of alternatives, of problematic situations, even a "possibility of possibilities," as Abbagnano has indicated. Primordial being may indeed be described as the "possibility of human existence." Nonetheless the world so conceived contains, and for the physical scientist is characterized by, the space-time continuum. There results a basic conflict that becomes clearly apparent in Problems III and IV below, as Chaix-Ruy lists the following antinomies:

> I. *Thesis:* The world exists for me only in so far as it is present to my consciousness.
>
> *Antithesis.* The world enjoys an existence independent of my consciousness.
>
> II. *Thesis:* Space and Time are ways in which objects appear to me. They have reality only for my consciousness.
>
> *Antithesis:* Space and Time are independent of my consciousness. They exist prior to it. They condition it on all sides and they contain it.
>
> III. *Thesis:* I am aware of myself as conditioning all my actions, as an absolute beginning.
>
> *Antithesis:* My actions are conditioned by other actions; they form a succession in which my very existence is contained. I am a moment in a limitless becoming.
>
> IV. *Thesis:* My being is linked to my existence; I am at every moment quite certain of my reality as an existing being.
>
> *Antithesis:* I am incapable of existing by myself, and the present moment contains nothing that guarantees a future. No necessary relation pertains between my being and my existence (pp. 304-05).

In the end, Chaix-Ruy argues that the ultimate consistency of things lies beyond the reach of our experience but not beyond the scope of our reflection. In the same way, Descartes' *dubito* announces the distant presence of a truth that we cannot grasp. Here we find that we must in conclusion content ourselves with a rational faith, a faith in reason, or in ultimate consistency. Such faith may be supported by fragmentary insights whose interpretation is the province of the philosopher. Chaix-Ruy's concern for the content of esthetic experience indicates that, like Kant and Schelling, he is ready to consider the evidence that such insight has to offer in support of the philosopher's faith in an ultimate harmony of being, beyond the antinomies. Here Chaix-Ruy quotes Baudelaire: "The beautiful is always and inevitably of a double composition, however unified the impression that it produces. Beauty is made of one element eternal and invariable, and of another relative and circumstantial" (p. 309). These two elements, although quite distinct, are reconciled even unified by the artist. Can this be considered an exemplar of being? An affirmative answer is suggested.

Les dimensions de l'être et du temps is an ambitious book and some of its readers will feel that Chaix-Ruy has raised more problems than he has solved. I would agree with this comment, adding only that such a remark need not reveal a hostile attitude or imply a negative evaluation. Today, continental philosophy is formulating a new orientation and in doing so it must restate the great problems. Only thus can it make a significant contribution. This contribution is, after all, nothing less than a revival of idealism in the broader sense. This new or existentialist idealism is not likely to degenerate into a monistic absolutism or pantheism, as its predecessors so often have done, since, through the notion of choice and self-commitment, it has sought to grant the finite individual an ontological status often denied him. For this reason, the new philosophy will attract the interest of many students and gain their sympathy.

Indiana University.

NATURE, MIND AND MODERN SCIENCE

GEORGE SCHRADER

Stated in the simplest terms, the major constructive thesis of Harris' book consists in the attempt to establish the fundamental soundness of the Hegelian philosophy and its relevance to contemporary science and philosophy.[1] The author is aware that there is nothing surprising in this thesis, save perhaps that it should be defended at the present time. But he is suspicious of novel philosophical theories, and on principle (p. 445). For if his argument is sound, there is never any genuine novelty in the world, but only the self-movement of being from potentiality to actuality. A genuinely revolutionary philosophical theory is ruled out on two counts: 1) the development of thought is evolutionary, meaning that it is the continuous unfolding of the implicit into the explicit, and 2) the absolute philosophy is at hand. He refers to his own philosophical position with commendable frankness and, for these times, courage as "absolutist." On this view we have "absolute knowledge," not in perfect detail, but in principle. The metaphysical outline and structure is available; it waits only to be filled in and perfected. The most important single problem raised in this book centers on precisely this issue.

Harris is not unaware of the problem involved or of the fact that a very large number of philosophers would disagree with his own stand on the matter. He even goes so far as to call it a paradox—though he hastens to make clear that he does not actually regard it as such. "How can a finite and imperfect fragment aspire so to transcend its own limits as to cancel its fragmentary and imperfect character, which yet must be maintained in order that its knowledge should not be defective"? Employing the same argument which Hegel used against Kant's theory of the Thing-in-itself, Harris adds that "to know of limitations is at once to have transcended them" (p. 54). Now there

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[1] Errol E. Harris, *Nature, Mind and Modern Science* (London, George Allen & Unwin, 1954).

can be no doubt that this is the case. To be aware of finiteness or subjectivity is to be one step beyond it, to recognize it for what it is. And some ideal or idea is required by virtue of which we can assess the limitations of our situation. But, we must inquire, what purchase do we thereby acquire on the absolute? What sort of transcendence do we achieve? Is absolute knowledge always implicit in our imperfect knowledge of the world in such a way that we can hope to put our imperfections behind and achieve a level of thought and knowledge at which being and truth are one? Or is knowledge necessarily infected with a mode of subjectivity which is ineradicable?

This is the problem: how a finite mind can have absolute knowledge. If not a genuine paradox, the magnitude of the problem is indicated by the fact that the majority of contemporary philosophers reject the absolutist commitment. There is a strong thread of empiricism which runs through the development of modern philosophy, indeed through the entire history of western philosophy from Plato on. Yet, the attack upon empiricism in all forms constitutes the major negative thesis of Harris' book. For Harris correctly sees empiricism as insisting on the inevitable finitude of human knowledge and, hence, on the denial of the absolutist point of view. His criticism of those philosophers who have professed to be empiricists, as well as of the empirical moment in such philosophers as Whitehead, is telling and acute. The perfect philosophy embodying empiricist principles is yet to be devised. But Harris goes altogether too far, I think, in regarding empiricism as a prejudice, "an outworn and outmoded superstition" (pp. 450, 452). Such an extreme statement is altogether too much like the dogmatic pronouncements of the positivists about the meaninglessness of metaphysical assertions which Harris decries. Does the choice lie between empiricism and unqualified rationalism, between positivism and absolutist metaphysics? If so, and this is the way in which Harris puts it, the philosopher is faced with an inescapable dilemma.

The chief objection raised against absolute knowledge as expounded by Hegel is that it is achieved only from the side of finite mind. It is nothing short or a delusion, Hegel's critics might argue—and some of them have said as much—to conclude

that the zenith of knowledge attained by finite mind ever obliterates the distinction between the finite and the infinite. Absolute knowledge even as attained by Hegel, they might add, is only finitely achieved. If it were ever possible to put finitude aside and take up the position of absolute mind, then absolute knowledge could be achieved without qualification or limitation. But if knowledge involves and even requires finitude, then to attain to the absolute would be to leave knowledge behind—as the mystic recognizes, embarrassing though it is. Harris thinks that he has forestalled this objection by insisting upon the particular and universal character of the human mind. "These two aspects of the human mind seem incompatible, and yet somehow it has them both. How they may be reconciled is perhaps the most important and difficult problem in the whole field of philosophical speculation, and it is not solved if either aspect is neglected or denied" (p. 54). The empiricists are indicted for neglecting the universal aspect of the human mind. The question which must be considered is whether Harris neglects the particular aspect, and (what is equally important) whether he correctly interprets the universal.

That the human mind has and must have a degree of transcendence and universality if knowledge is to be possible is a point definitively established by Plato and admitted by the majority of philosophers. The denial of transcendence is self-refuting and leads to mute skepticism. This much of Harris' thesis, which is substantiated by a meticulous and incisive examination of representative philosophers from Plato to Whitehead, we can readily admit. But the problem is to determine precisely what it is to which we have committed ourselves. What is the nature of the transcendence and universality which is involved in knowledge and thought? Is the universality present in human thought and consciousness the immanent manifestation of absolute mind? And if so, how is the separation of the universal and the particular moments within the human mind finally overcome? As Harris observes, this is one of the most difficult of all philosophical problems. Does man really become God, or the particular the universal? Harris would dispose of this problem by having the universal generated out of the particular by a continuous evolutionary process. But in order

to do this he must deny that there are any genuine particulars or individuals. All particulars turn out in the end, after his analysis, to be disguised or, better, concealed universals.

There are several questions which we must raise at this point, questions which concern the fundamental dialectic of Hegel which Harris espouses. The dialectic can be described in at least two ways: as the particular which is striving to become universal, or the universal which is striving to become particular. If man is reaching for divinity, God is no less seeking to become incarnate in the world. This two-fold movement from particular to universal and from universal to particular is possible because each is implicitly the other. The particular is potentially universal in meaning and significance even as the universal is potentially concrete. Each is a negative determination of its opposite. Any concrete particular is the specification of a universal, and any universal the expression of concrete particularity. The drive which moves the dialectic is the urge to overcome the self-alienation involved in the dichotomy between particularity and universality. The end-product, the telos of knowing and becoming, is the achievement of the concrete universal, the notion. But this achievement is possible, so Hegel argues, only because the notion was implicit at every stage in the dialectic. Hence, in one sense there is not and could not be any genuine movement or development within reality. The disparity between universal and particular turns out to be apparent only. If it were a genuine duality the progression of the dialectic and the attainment of its end would not be guaranteed. One of the major problems which confronts both Harris and Hegel is to allow the sort of negation necessary for dialectical movement and becoming, while maintaining the kind of ontological unity which is necessary for the reconciliation of opposites.

Although Harris wishes to acknowledge time, history, and evolutionary movement, it is questionable whether he, any more than Hegel, can provide the necessary metaphysical conditions for process. If evolutionary development, which Harris takes to be the fundamental characteristic of reality, is simply the movement from implicitness to explicitness without any real gaps or risks of any sort (pp. 206, 241), then time is clearly unessential.

Time involves and requires a more radical kind of negation than is allowed by Hegel's logic. Moreover, it entails genuine contingency. If possibility is equated with potentiality and if potentiality is so determinate that it embodies actuality in implicit form, then development is but the temporal manifestation of that which requires no development at all when viewed from the standpoint of absolute knowledge. Harris' view of evolutionary development is such that the initial stage contains implicitly all the determinateness of any of the later stages (pp. 439 ff.). He rejects as untenable those metaphysical theories which acknowledge "emergence" and "creativity."[2] There can be genuine development, he maintains, only if the end is implicit in the beginning and serves as the final and efficient cause of the evolutionary process (pp. 105, 440).

It may very well be the case that we can speak of a process as developmental or evolutionary only if we can grasp some continuity in the process. When we talk of something "developing" or "evolving" we mean to refer to the characteristic of realizing more fully certain antecedently evidenced capacities or potentialities. But even granted this analysis of the concept of evolution we must inquire whether this ever sufficiently characterizes any temporal process. If the notion of development involves the concept of logical identity and implication, it must also be noted that it has an implicit time-reference. We can think of "logical

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[2] Harris is sympathetic with the emphasis upon evolution and process in the writings of Bergson, Alexander, and Whitehead. But he insists upon a reformulation of "emergence" and "creativity" which results in the rejection of real novelty. His stress upon the perfect teleological character of evolutionary process requires him to deny the essential uniqueness of "creativity" as a category. In appraising the views of Alexander and Lloyd Morgan he states: "It is in the notion of evolution that the positive value of their philosophy lies and if that notion is clarified and freed from *empiricist entanglements*, we get a doctrine both characteristically modern and far in advance of other contemporary theories" (p. 414, my italics). But these *empiricist entanglements* in the process philosophers, including Whitehead, constitute precisely those features which are distinctively unique and differentiate them, say, from Hegel. The Hegelian conception of evolution could be reconciled with the views of such thinkers only by discarding the empirical element. By stressing only the notion of development Harris seems to gain a support for his position from "the philosophies of evolution" which they do not actually provide.

development" only by analogy to temporal process. In addition to the supposedly timeless and eternal relatedness of the conceptual contents apprehended, we implicitly include the temporal movement of our thinking processes. But human thought is capable of error. Though a conclusion arrived at is necessary in relation to premises which entail it, this does not mean that there was no contingency involved in the thought process by which we arrived at the conclusion. Viewed as a timeless system of relations, there is or can be no development in the realm of logic. It is only when we think of logic as a process or an enterprise in which human thought is at work that any real development occurs. But in the latter instance time and the risk of error is introduced.

In his consideration of the history of philosophy and modern science Harris seeks to show that mind is at home in nature. It is at home in nature because nature is essentially the expression of mind. To make out his argument he appeals not only to natural evolution with its stress on continuity, but also to the dependence of truth on this fact. If mind were really not one with nature or reality, he argues, knowledge would be impossible. He rejects the correspondence theory of truth on the ground that it can never be applied. The correspondence theory is predicated on the supposed independence of that which is known from the knowing mind. But, he asks, how can mind know whether its ideas conform or fail to conform to that which is altogether beyond its grasp? To be capable of knowledge mind must not only be at home in the world but be one with the world.[3] There must be an implicit identity of mind and its object. Truth is but the product of the full realization of this identity.

In his criticism of the subjectivism of contemporary empiricist theories of knowledge Harris calls our attention to the necessary involvement of mind with nature and the world. It is not just the *Cogito ergo sum* but the *Cogito ergo res omnes sunt* with which we must begin (p. 448). It is not the finite subjective consciousness of Descartes but the cosmic mind of Hegel which is

[3] "The world is in the mind as the object of its knowledge, because its knowledge is the world come to consciousness of itself, through that same process, in and as the mind" (p. 448).

presupposed in all thought and knowledge. Harris correctly interprets Whitehead as being essentially an Hegelian in his denial of simple location and his theory of prehension. The human mind must be directly involved with the world, must reflect the structure of the world in its own thought processes, else it could never be said to know the world. But the inevitable question is: Just how much at home in the world must the human mind be if knowledge is to be possible? Does involvement with reality require the substantial identity of finite mind with its object? Is this identity of subject and object a metaphysical fact, an a priori certainty, or only a necessary ideal of human reason? Harris makes out a very good case for the latter point but it is less clear that he succeeds in demonstrating the former and more difficult one.

A necessary condition of the possibility of science and philosophy is that the subject-object dichotomy involved in knowledge not be absolute. If both subject and object were not from first to last mutually involved with one another and co-present within a cosmos the duality itself would be inexplicable. In knowledge the human mind both transcends itself in laying hold of the object, and is transcended. It finds upon reflection that the subjectivity of consciousness originates in a pre-reflective state in which subject and object, if not one, at least stem from a common ground. Man can have knowledge of nature only because he is a natural being. Scientific knowledge is as much a disclosure of the meaning and structure of nature as of the human mind. There is, in short, a primordial metaphysical unity underlying the subject-object distinction without which knowledge would be altogether impossible. Harris drives this point home again and again in his examination of both philosophical and scientific theories. He succeeds in showing conclusively that any theory which denies this premise must necessarily fail to give an adequate account of knowledge . Our question must focus, then, upon the nature of this original unity and its relation to the mode of subjectivity involved in human knowledge.

It follows from Harris' argument, I think, that if God and man are to have anything at all to do with one another, certainly that if man is to know God, man must be implicitly identical with

God. The ontological argument actually lies at the base of all knowledge, Harris maintains (p. 442). And as he interprets the ontological argument, it provides a guarantee of the possibility, indeed the necessity, of the incarnation. If God in his primordial nature, to use the Whiteheadian concept which Harris finds acceptable, is the ultimate unity of all reality, any mediation between God and the world, or between God and man, is really the self-mediation of God in relation to Himself. If taken in this form the argument not only demonstrates the reality of God but his identity with the world. This consequence of Hegel's position has always seemed objectionable to those theologians who insist upon the radical transcendence of God. For if Hegel is correct, God and man are always implicitly reconciled; man is always redeemed and could not be otherwise. Christian theology denies both the fundamental tenets of this position, namely that man and the God of theism spring from a unitary ground and that the alienation between God and man is only apparent. For Christian thought the redemption of man is a hope rather than an ontologically certified truth. Moreover, it never raises man to the status of divinity. Even if before the creation there was no distance between God and man, the fact of the creation establishes such a distance. Is the distinction between God and man really "a distinction which is no distinction," to employ Hegel's phrase?

But we need not consider the problem only from the theological side, and it would not be fair to do so in view of Harris' very brief reference to the theological implications of his own views. If the absolutist position is unable to give an adequate account of religion, if it has consequences which run counter to the testimony of the religious consciousness, then this is a mark of its metaphysical inadequacy. But it is on the ground of epistemology that Harris undertakes to argue his case and it is here that we must consider its soundness. His argument is both dialectical and historical in form and the two are so intermingled that it is difficult to separate them. By a selective treatment of the history of philosophy he seeks to show that there are "eternal problems," and that the most important single problem is that of the relation of mind to nature (pp. 45, 439). On his inter-

pretation the development of philosophic thought from Plato on culminates in Hegel, whose position is correct in substance if not in detail.

In the period after Hegel, Harris sees a general falling away from the true position and the rebirth of an outmoded empiricism. "Though ideas underlying modern science were anticipated in the doctrines of the greater philosophers of the 17th and 18th centuries, thinkers of the 19th and 20th, with few exceptions, lagged far behind the progress of science" (p. 256). Among the "few exceptions" are Bergson, Alexander, and Whitehead. Whitehead comes closest to expressing the true metaphysical position in the light of the developments of modern science, but is impeded by the lingering empiricism which infects his thought. Freed of its allegiance to empiricism, which consists principally in the acceptance of a "given" element in knowledge, and with a few corrections, Whitehead's philosophy is regarded as the most adequate metaphysical system of the last two centuries (p. 415). In addition to the empirical factor, Harris finds it necessary to remove whatever tinge of Platonism is to be found in Whitehead's thought. This involves, among other things, a re-interpretation of the doctrine of "eternal objects." But such a modification of Whiteheads's philosophy is by no means trivial. It involves a radical re-interpretation of possibility, the denial of any degree of abstractness to universals, and a more extreme form of the doctrine of internal relatedness. Whitehead has great difficulty in sustaining individual entities within his system as it is. To push the monistic element in his thought one step further would be to give up the independent reality of the individual altogether. Harris is willing to dispose of Whitehead's doctrine of creativity and particularity without reluctance. But there can be little doubt that Whitehead would be just as uncomfortable in accepting such an unqualified monism as in going back to the doctrine of simple location. The importance of Harris' examination of Whitehead's position is that he shows two things: 1) that the Hegelian motif in Whitehead's thought is at least as important as the Platonic and tends even to override the Platonic aspect, and 2) that the attempt to mediate between organicism and pluralism is exceedingly difficult.

In dealing with Whitehead, as with each of the philosophers considered, Harris follows a single principle of criticism. If he finds any trace of dualism, any doctrines which lead to the actual or possibile frustration of speculative thought, he indicts the position as metaphysically inadequate. He succeeds admirably in pointing out tensions, unreconciled oppositions, limitations upon thought in almost all of the philosophers examined from Plato to Whitehead. But he does not subject his own principle of criticism to any searching examination and concludes too easily that reality must answer to the ideal needs of speculative reason. Granted that any philosophical theory which admits both concrete particulars and abstract universals will be faced with certain embarrassments and difficulties, the question is whether or not reality is so constituted. If the unity of the world does not in fact answer to the demands of thought, reason is thereby forced to acknowledge its own limitations. If human thought is necessarily dependent upon the receptivity of sensation this may be unfortunate and require the perpetual frustration of reason. But we must not conclude too hastily from the frustration to the falsity of the premises on which it is founded. If the individual, in spite of the richness of his relations to the whole of reality, is necessarily to some extent cut off and isolated, forced always to return upon himself, a limitation is placed upon human knowledge. But metaphysics and the theory of knowledge are required to make explicit the nature of reality as it is and not as it ought to be. And even if it can be established that there is a clear rational ideal which ought to govern reality, we must inquire what evidence there is for a cosmic mind capable of implementing the ideal. Harris often seems to beg the main question at issue by taking for granted the nature of the ideal to which he appeals. He recognizes that his entire case depends upon the ontological argument. But if his principle of interpretation and criticism already presupposes the argument, it cannot be employed in proof of it. Thus, few philosophers are likely to be persuaded of Harris' conclusions on the basis of his critical examination of the history of philosophy. Many of his readers will agree with much of his criticism, as does the present writer, but not with conclusions drawn from it. The follower of Plato may be forced to admit

that in the final analysis there is an element of faith involved in his metaphysics which he cannot get rid of without revising some of his first principles. But if he remains unpersuaded that Hegel is able to dissolve faith into knowledge he will not feel moved to relinquish his position. Similarly, the Kantian will be even more aware of the inevitable unhappiness which confronts him in his inability to surmount subjectivity altogether. But if he is already reconciled to this unhappiness, to the limits within which human reason must operate, he will recognize no necessity for adopting the Hegelian position.

Harris has a tendency to underestimate the importance of those features of a philosophical position which fail to accord with his own views. This sometimes leads to a misunderstanding of the position under examination. This is notably the case with his interpretation of Kant where he overstresses the interrelationship between the empirical and the conceptual. Harris is simply mistaken in concluding that on Kant's analysis "there can thus be no a posteriori synthetic judgments." What he should have said is that "there can be no judgments which do not make use of an apriori rule." Thus there can be no *merely* a posteriori judgments. But Kant is quite explicit on the point that there are a posteriori judgments and that they are contingent and hypothetical. It is only the rule or category which is universal and necessary. Harris errs, also, in stating that for Kant the relation of cause and effect is one of logical necessity. The causal relation has ingredient in it a logical form which, as Harris points out, is necessary for the apprehension of a spatio-temporal manifold. But there is also a material side to the relation, namely that of the time content itself. The necessity involved in causal relations cannot be grasped in terms of either the formal or the material component taken by itself. The possibility of causal necessity rests as much upon the sensible nature of time as upon the nature of thought. To see this distinction it is only necessary to recall Kant's careful differentiation between the logical relation of ground and consequent and that of cause and effect. Causality represents the projection of the logical relation into the frame of time. The synthetic necessity which results is not fully intelligible to reason. There is an unanalyzable material ground of the

relation which is an indispensable condition of its necessity. It is for this reason that a deduction of categories cannot be carried out from the side of the understanding alone. Harris quotes Kant to the effect that "all connection is the work of understanding" in support of his point. Whatever may be said about this extremely problematic passage in Kant, it is clear, I think, that Kant did not mean to hold that all necessity is logical necessity. Finally, I see no justification whatever for Harris' assertion that "after Kant wrote, the dichotomy of subject and object was no longer possible" (p. 196). Modern empiricists, he concludes, "have not only neglected Hume's awful warning, they have entirely overlooked the critical problem of Kant and the reconstruction in philosophy which his treatment of it made possible" (p. 197).

Harris pays high tribute to Kant, and it is good to see how aware he is of the non-subjectivist side of Kant's philosophy. But in choosing to stress only the rationalistic side of Kant's thought, Harris seems to be guilty of the very error of which he accuses the empiricists—namely, of "having overlooked the critical problem of Kant." Harris does not even pause to consider the argument so forcefully presented by Kant that the price of knowledge is perpetual subjectivity. In failing to take the "critical" aspect of Kant's thought seriously Harris passes over all too quickly to the position of Hegel and, as a result, fails to address himself to the predominantly Kantian basis of much of contemporary scientific thought. Harris is on very weak ground in attempting to support an idealistic metaphysics of the Hegelian type on the basis of the present status of the natural sciences. The biologists have, perhaps, tended to adopt an evolutionary and teleological point of view. But Harris does not show and it is highly doubtful if he can show that contemporary physics has found it necessary to re-introduce the concept of teleology. Harris relies heavily upon Eddington and Whitehead to make out his case with respect to contemporary physical science. The fact, however, that Eddington or any other physicist should have been inclined toward some form of idealism is no proof that modern physics *implies* an idealistic metaphysics.[4] And fairly good evi-

[4] "Nevertheless, the conception of nature which has emerged as the

dence could be advanced to support the thesis that if the physical scientists incline towards idealism at all it is towards the Kantian rather than the Hegelian form. But the more important question is: in what way does modern science *imply* any one metaphysical theory? Harris' language in considering this point is instructive. He asserts that contemporary science "points to" an idealistic metaphysics. But this is a singularly vague description of the relation and leaves ground for diversity of interpretation. Only if contemporary science could be shown to imply and/or presuppose one and only one metaphysical theory could Harris use this as support for his position. Secondly, if scientific theory and, consequently, the metaphysical presuppositions and speculations of scientists, is subject to change, whatever basis science provides for a metaphysical theory can be only hypothetical. At most, I think, Harris shows that a Hegelian metaphysics is consistent with and relevant to the world-view of contemporary science.

Hegel's philosophy of science is generally regarded to be the most inadequate phase of his philosophy. In stating Hegel's conception of nature and of the relation of nature and spirit Harris offers a much needed correction to the usual interpretation of Hegel. He establishes that Hegel's philosophy is not only compatible with experimental science but also that it provides important leading principles for the interpretation of scientific fact (p. 255). Harris points out that to the extent that the evolutionary viewpoint has become dominant in contemporary science it satisfies the strictures laid down by Hegel and, hence, goes beyond the level of understanding at which Hegel had fixed it. But the case is much stronger here on the side of the biological than on the side of the physical sciences. Bio-physics is yet in its infancy and it is too early to say in what way the divergencies in viewpoint between biology and physics will be adjusted. Nor is contemporary physics fundamentally teleological or evolu-

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result of modern scientific development *implies* a metaphysic which is Hegelian in its main essentials" (p. 255). But in discussing contemporary physics Harris makes a more modest claim, "Scientific theories of energy and matter, particularly the Quantum Theory, also *point to* such a philosophical interpretation as I am suggesting" (p. 443, my italics).

tionary in its view of nature, and there is some debate, at least, whether teleology is a necessary category for biology. But in spite of disagreements among the scientists, Harris can appeal to the prerogative enunciated so clearly by Whitehead that science is in need of and subject to the correction and modification of metaphysical thought.

In spite of his general acceptance of Hegelian principles, in one important respect Harris seems to be curiously un-Hegelian. Although he accepts dialectic as constituting the structure both of nature and mind, he does not actually regard the history of philosophy or science as dialectical. He recognizes a developmental movement in history, a movement toward the perfect conception of system (p. 446). But he does not regard it as a dialectical movement in the Hegelian sense. Thus he does not see empiricism in any of its forms or stages as a necessary moment in the dialectic of spirit, a moment which is retained even in being transcended. Harris sees empiricism only as an error and one that in contemporary philosophy and science should be completely eliminated. It has always been a difficult problem to see how Hegel can actually retain the integrity of the positions which are "aufgehoben" in the dialectical process. But Hegel insists that the transcending of a position involves both its negation and its appropriation. The truth is not any one position arrived at in the process of dialectical development, no one stage in the process, but the entire process itself. This seems to imply that empiricism constitues an essential moment in absolute truth and, further, that it must be dialectically affirmed in opposition to abstract rationalism, for example.

The chief difficulty which seems to confront Hegel is how to avoid setting his own philosophical theory alongside that of Plato, Aquinas, or Kant, how it can offer itself as more complete or more perfect than other theories. If the truth is the whole, then it would appear that the negation of Hegel's own formulation is equally as necessary as any other negation in the life of spirit. In being confronted with this particular problem Hegel gives evidence to the fact that absolute knowledge cannot be absolutely realized in his own philosophy. Its limitation lies in the fact that it can be questioned and negated. But even if the strongest

possible argument is allowed in behalf of the Hegelian metaphysics it is evident that it has an ambivalent status. It is, on the one hand, a stage, a moment, within the historical development of philosophy and must be studied as such. Hegel must be compared with Plato and with Kant, the adequacy of his theories tested in relation to the formulations of his predecessors and contemporaries. But, on the other hand, it claims not to be a position at all, not even the highest stage in the dialectic, but simply the truth of the whole dialectical process. The fundamental problem is how a position such as Hegel's which seeks to be the entire dialectic of spirit can include itself in the dialectic. How can it be both a stage in the dialectic and the entirety of the dialectic? In one sense the Hegelian metaphysics must be false in order to be true; it must be false as a position if it is to be true as the all-encompassing dialectic.

There is no indication that Harris recognizes this ambivalent character of the Hegelian philosophy. He apparently considers Hegel's metaphysics as a stage or position in the history of philosophy, one which supersedes the earlier stages and includes in itself only those elements which are permanently valid. What remains to be done in the future is to complete and perfect the system. It is possible to take this view of Hegel and adopt it as a basis for argument as Harris does. But surely this is not to take philosophical truth as dialectical. If philosophical truth is genuinely dialectical, empiricism, for example, must be a necessary moment within the whole. It cannot be simply superseded but must be retained and preserved.

Although Harris considers the history of philosophy, his method is not intrinsically historical. In the final analysis it makes little difference whether he is criticizing Hume or Russell, Plato or Whitehead. He regards history as dialectical and continuous with the evolutionary processes of nature. But if he were to include the history of philosophy within the overall dialectic he would be faced with the same sort of problem which confronts Hegel. One cannot help wondering how he would explain the re-birth of empiricism in the twentieth century. As Harris analyzes it, empiricism is but the manifestation of an outmoded and erroneous position and its exponents should have known

better. But why should mind express itself in this way? This poses a nice problem of the correlation of logical and historical development, a problem which Harris is implicitly committed to dispose of. As it is, one cannot help feeling that the excursion into the history of philosophy is really an unnecessary exercise and that the book would have been stronger if it had been more systematic and less historical.

Harris' scholarship is careful and generally sound, and the book is exceptionally well written. It is admirably designed to carry out the limited purpose for which it was intended, namely to present a comprehensive metaphysical theory in as attractive a form as possible as an alternative to the skeptical and positivistic theories of the present day. But there is comparatively little in the volume with which the careful student of Hegel and the idealistic tradition stemming from him will not be familiar. It refurbishes old truths and sets them in the midst of the contemporary scene as something still to be seriously reckoned with. Like Blanshard's exposition of what is essentially the same position in *The Nature of Thought*, it is strong in its criticism of other positions and to be valued for the skill and clarity with which error is brought to light.[5] But on the constructive side it does not go beyond Blanshard.

Yale University.

[5] Harris makes no reference to the work of W. M. Urban which in many respects parallels the main argument of his book. This is particularly true of the *Intelligible World* in which Urban attempts to establish the unity of being and value, like Harris, by insisting upon the necessity of teleology.

CHINESE THOUGHT

WING-TSIT CHAN

THE volume under study consists of papers presented at a conference in Aspen, Colorado in 1952 by nine scholars.[1] As the editor tells us, "The discussions at the conference were lively and illuminating. As a result the participants gained valuable suggestions toward the revision of their papers, a new feeling for the ramifying problems of this field of study, and some inkling of the great variety of ways in which those problems may be studied" (p. ix). Whether it was intended or not, the central emphasis of the conference seems to have been on language, for four out of nine essays deal with it.

The first essay, "Harmony and Conflict in Chinese Philosophy," by Derk Bodde, treats the subjects of the cosmic pattern, the pattern of history, good and evil, the harmonization of social classes, peace and war, the harmonizing of opposites, and the sage. To those who want a bird's eye view of Chinese philosophy on these questions, the article is highly recommended. It is also an excellent summary of Fung Yu-lan's *History of Chinese Philosophy*, which Bodde has translated into English,[2] with respect to these concepts. With certain exceptions all materials are drawn from Fung and summary references to Fung's book are frankly given at the end of many paragraphs. Most works available in English translation are also cited according to quotations made from them in Fung.

As such a summary, the essay reflects both the strong and weak points of Fung's *History*. For example, what little Chinese

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[1] *Studies in Chinese Thought*, ed. by Arthur F. Wright, The American Anthropologist Comparative Studies of Cultures and Civilizations, No. 1 (Dec. 1953); (Chicago: University of Chicago Press, 1953).

[2] Fung Yu-lan, *A History of Chinese Philosophy*, tr. by Derk Bodde, 2 vols. (Princeton, 1952-53). See my review of it both as a history of Chinese philosophy and as a translation in *Philosophy East and West*, IV, 1 (April, 1954), 73-79.

philosophers have had to say on the philosophy of history is well presented and discussed by Fung and neatly condensed here plus the author's own appraisal of it. Nowhere else in English can one find such a panoramic view of Chinese philosophy of history. On the other hand, Fung is very weak in Neo-Confucianism, and Bodde reflects this shortcoming.

In the section on the cosmic pattern, the most characteristic Chinese ideas are brought out as follows: The Chinese consider the universe as natural in origin and in operation; it is in a constant state of flux; this flux consists either of eternal oscillation between the poles or of cyclical movement within a closed circuit. So far this is correct, but a very important point in connection with the cyclical idea has been overlooked. This is the idea of *sheng* (life, growth, production) in the Neo-Confucianism of the eleventh and twelfth centuries, to the effect that each event or thing in the universal process of change is something new. As Ch'eng Ming-tao (Ch'eng Hao, 1032-1085) put it. "'The greatest characteristic of Heaven and Earth is to produce.'[3] . . . The most impressive aspect of things is their will to live. This is Origination which is supreme goodness."[4] To this his younger brother Ch'eng I-ch'uan (Ch'eng I, 1033-1107) added: "When a thing disintegrates, Material Force is at an end. It is absurd to say that Material Force returns to its origin. The Universe is like a vast furnace. Even living things, when burned, are reduced to ashes and are at an end. How can Material Force that is already disintegrated still exist? Furthermore, what is the need of such an exhausted Material Force in the creative process of the universe? It goes without saying that the force used in creation is vital and fresh."[5] Again he said, "The Way spontaneously produces all things. What has grown in the spring and what has matured in the summer are all productions of the Way. When things grow

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[3] Quoting the *Book of Changes, hsi-tz'u*, Pt. II, Ch. 1. See English translation by James Legge, *Yi King, Sacred Books of the East*, XVI (Oxford, 1882), p. 381.

[4] *I-shu* ("Literary Remains") (in the *Erh-Ch'eng ch'uan-shu*, or "The Complete Works of the Two Ch'engs," 1933 edition), Ch. 11, pp. 3a-b.

[5] Ibid., Ch. 15, p. 15b.

in the next season, we should not say that the Material Force already used for production now produces again. It is the Way that spontaneously produces and reproduces without end." *

It is clear that while change operates in a cyclical pattern, each production in that process is fresh and new. This idea of perpetual renewal was extremely important in the Southern Sung period and eventually became the general viewpoint of Chinese thinkers ever since. Bodde hardly mentioned these Neo-Confucianists in his discussion but, instead, relied on Shao Yung (Shao K'ang-chieh, 1011-1077) and Chang Tsai (Chang Heng-ch'ü, 1020-1077) who were too much under the influence of Taoism in their cosmology to be representative of Chinese thought in this respect. Because of this idea of new production, the cycle is not one within a closed circuit but one that leads to something new at every turn.

It is true that the cyclical theory has been carried over to the field of the philosophy of history and became the dominant concept. Two general patterns of history are discussed by Bodde, one cyclical and the other evolutionary. Implicit in these theories are the basic ideas that history is dynamic, not static, and that it always changes according to a fixed and therefore knowable pattern. Bodde concluded, with justice, that "most thinkers . . . have either asserted the superiority of antiquity to later ages or have maintained that historical movement, though an actual fact, operates only in the form of recurrent cycles. A few have tried to combine these two prevailing points of view by asserting that we moderns happen to belong to the down-swing of one such cycle. All such theories, irrespective of other differences, obviously agree in their implicit denial of the possibility of long-term historical progress" (p. 36).

As to good and evil, Mencius' doctrine that human nature is originally good, Hsün Tzu's doctrine that man's nature is originally evil, Yang Hsiung's doctrine that man's nature is mixed, and Han Yü's theory that men's natures fall into three categories (the superior, which is wholly good; the medium, which may be made

* Ibid., Ch. 15, p. 5b.

to be either good or evil; and the inferior, which is wholly evil) are briefly described. Since Mencius' doctrine has been generally accepted, evil is not regarded as natural but a result of human weakness or deviation from the Mean. Thus Chinese thinkers have generally avoided good and evil as two contending forces. The upshot of the doctrine of the original goodness of human nature has been the gospel of universal salvation in Chinese religions.

These cardinal Chinese concepts are clearly explained and accurately described. However, two philosophical problems on good and evil which Neo-Confucian philosophers seriously tackled are ignored in the presentation. In trying to explain the origin of evil, Neo-Confucianists like Chang Tsai and Ch'eng I-ch'uan were not satisfied with Mencius' answer that evil was due to man's laziness or other human failures. The matter had to be explained metaphysically. Why is there evil if human nature is originally good? In answer to this question, Chang Tsai said, "Nature in man is never evil. . . With the existence of physical form, there exists the physical nature. If one skillfully recovers the nature of Heaven and Earth, then it will be preserved. Therefore in the physical nature there is that which the superior man denies to be his original nature." [7] This is explained by Chu Hsi (1130-1200), who said, "The nature of Heaven and Earth is the excellence of the original nature of the Great Ultimate and the basis of unity of all multiplicity. The physical nature, on the other hand, is produced by the interaction and operation of the two Material Forces, that is, the *yin* or the Element of Weakness and the *Yang* or the Element of Strength; it is the multiplicity out of one basis." [8] Thus the physical nature in man is the source of evil. As Chu Hsi put it, "The two Forces sometimes mutually supplement each other and sometimes contradict each other. . . . Sometimes their mutual operation is even and easy but sometimes unbalanced. Hence there is evil and there is good." [9] This, in

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[7] *Cheng-meng* ("Correct Discipline for Beginners") (in the *Cheng-i-t'ang ch'uan-shu*), Ch. 3, p. 8a.

[8] Commentary, ibid.

[9] *Chu Tzu ch'üan-shu* ("Complete Works of Chu Hsi," Palace edition, 1713), Ch. 43, p. 4a.

brief, is the Confucian position. Whether the theory is satisfactory or not, it has been an exceedingly important development in Chinese thought and was a serious attempt to solve a critical problem.

The other question on good and evil is whether they are cosmological at all. Bodde is misleading, to say the least, in saying that "we find the Ch'eng brothers insisting on the fact that goodness and evil are both inherent in the cosmic pattern and therefore cannot be disassociated from one another" (p. 41). Ch'eng Ming-tao clearly stated, "Man is not born with these two opposing elements [good and evil] in his nature. . . . [As the *Book of Rites* has said,] 'By nature man is tranquil at birth.' [10] The state preceding this cannot be discussed. Whenever we talk about human nature, we already go beyond it." [11] As Chu Hsi clarified the matter, "It is true that Original Nature is an all-pervading perfection not contrasted with evil. This is true of what Heaven has endowed in the self. But when it operates in man, there is the differentiation of good and evil. When man acts in accord with it, there is goodness. When man acts out of accord with it, there is evil. How can it be said that the good is not the Original Nature? It is in its operation in man that distinction of good and evil arises, but conduct in accord with the Original Nature is due to the Original Nature. . . We fall into evil only when our actions are not in accordance with the Original Nature." [12] In short, good and evil arise in the human world, not the natural world. When Ch'eng Ming-tao is quoted on p. 41 as saying that "some things are good some evil," the word "things" should have been rendered "human affairs." It is true that Ch'eng I-ch'uan said that "Within the universe all things have their opposites," but the opposition of good and evil is found only in the mundane world.

The section on the harmonizing of opposites covers the harmony of man and nature, being and non-being, movement and

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[10] *Book of Rites*, ch. 19. See English translation by James Legge, *The Li Ki*, *Sacred Books of the East*, XXVII and XXVIII (Oxford, 1885), p. 96.

[11] *I-shu*, Ch. 1, p. 7b.

[12] *Chu Tzu ch'üan-shu*, Ch. 42, pp. 9b-10a.

quiescence, *yin* and *yang*, and Principle and Matter. The discussion is full and interesting. But why of all possible solutions of opposites did the Chinese choose harmony? Bodde did not go into the matter except to say that "confronted by the inexorable diurnal and annual alternation of the two, they were wise enough to see in them a pattern of movement necessary to the cosmic harmony rather than two irreconcilable warring forces" (p. 62). Was the Chinese solution a purely practical one and not an intellectual choice? It seems that the clue to the matter must be sought in the intellectual atmosphere of the third and second centuries B. C. when the cross currents of Confucianism, Taoism, and the Yin Yang philosophy were synthesized. At that time there were at least three possible solutions of opposites: through overcoming the one by the other, through mutual succession, and through harmony. It will be recalled that the dictatorship of the Ch'in dynasty was based on the theory of the Succession of the Five Powers. May it not be that the cruelty of the Ch'in and its rapid decline contributed to the Chinese rejection of the succession theory? It is reasonable to believe that the Confucian doctrine of the Mean and the Taoist identification of opposites were determining factors.

The second essay, "A Reappraisal of Neo-Confucianism" by W. Theodore de Bary is a substantial, comprehensive, and well balanced review of Neo-Confucianism of Early Sung, on which there is but scanty material in English. The attention is focused on social and political doctrines because they have been largely neglected by students of Neo-Confucian thought. Students of Chinese philosophy will readily agree with de Bary that it is wrong to suggest that the Neo-Confucianists were motivated exclusively by a concern for strict orthodoxy and blind conformity to whatever was sanctioned by the State. Examples are given how Chu Hsi and others challenged the thinking of their time and carried on the tradition of independent thought. With extensive and careful documentation, de Bary shows that Neo-Confucian thinkers, including the radical reformer Wang An-shih (1021-1086) were at once traditionalists and reformers, both in their thinking and in their political action.

The inheritance of Neo-Confucianism is often traced to Han

Yü (768-824). However, his philosophical importance has been generally overlooked because he made no original contribution to the speculative thought which flowered in the metaphysical systems of Sung. Fung Yu-lan's statement in his *History of Chinese Philosophy* that "Han Yü is primarily famous as one of China's great prose stylists, and there is little of purely philosophical interest in what he says [about the Way]" (p. 84; cf. Fung II, p. 410) is not quite correct. As de Bary reminds us, Han Yü was far more concerned with content than literary elegance. Furthermore, we may add, Han Yü's attack on Buddhism actually saved the Confucian Way from that of Buddhism, and paved the way for the development of Neo-Confucianism. Han insisted that the Confucian Way (*Tao*) rather than the Buddhist Way should prevail. As he protested, the Buddhist Way consisted of "doing away with the process of giving life to and supporting one another, and reducing life to silence and annihilation." It was the way of "having no activity." The Confucian Way, on the contrary, consists of "giving life to and supporting one another" and "ordering the state and regulating the family." It was the way of "having activity." In short, the Buddhist Way was nothing but an empty state of mind and inactivity and will inevitably result in dehumanizing man. Hence he said, "Make them [Buddhists] human beings again." [13] Thus Han Yü established himself "as the exponent and exemplar of a new ideal, a new *tao* as it were" (p. 85).

It is often held that Chou Tun-i (Chou Lien-ch'i, 1017-1073) was the chief progenitor of the Confucian revival in the Sung. Following excellent authorities, de Bary rejects this notion and rightly gives the honor to Hu Yüan (993-1059), Sun Fu (992-1057) and Shih Chieh (1005-1045). Hu Yüan, especially, expounded the threefold concept, generally held by early Sung scholars, that *Tao* is Principle, Practice, and Literary Expression. It was out of these concepts that new metaphysical theories, political reforms, and literary transformations were vigorously pushed by the Neo-Confucianists.

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[13] For these quotations from Han Yü's "Yüan-tao" ("An Inquiry on the Way"), cf. English translation by Herbert A. Giles in his *Gems of Chinese Literature: Prose* (London, 1923), pp. 115, 118, 121.

The relationship between knowledge and action is the subject of the third essay, "The Problem of Knowledge and Action in Chinese Thought since Wang Yang-ming," by David S. Nivison. It is an excellent account of Chinese thought on the subject in the last three hundred years and contains material so far not available in English. His analysis of the thoughts of the historian Chang Hsüeh-ch'eng (1738-1801), political reformer K'ang Yu-wei (1858-1927), and political leaders Sun Yat-sen, Chiang Kai-shek, and Mao Tse-tung on the question of knowledge and action, is particularly illuminating.

Nivison is essentially sound in asserting that Chinese thinkers have always emphasized action. Even Wang Yang-ming's doctrine of unity of knowledge and action tends to give priority to action. In fact, it was due to his reaction against the Sung Neo-Confucianists' apparent emphasis on knowledge that he advocated the doctrine of unity. But the dichotomy of knowledge and action in the Sung Neo-Confucianists is more apparent than real. From Confucius to Sun Yat-sen, in the final analysis, knowledge has been considered part of action. In this respect, the Chinese tradition has been an unbroken one. If the ancient *Book of History* stresses the difficulty of acting as compared with knowledge and if Sun Yat-sen stressed the difficulty of knowing, it was due to different motivations. In any case, there was no dichotomy.

The real dichotomy lies in the realm of knowledge itself, notably in the doctrine of two levels of knowledge advocated by the Early Sung Neo-Confucianists. Obviously under the influence of Buddhism, which sharply distinguished "pure truth" and "popular truth," Neo-Confucianists contrasted knowledge obtained from observation and knowledge obtained through the exercise of one's moral nature. In Chang Tsai's words, "The knowledge that comes from one's original nature is the knowledge of moral nature, whereas the knowledge that comes from one's hearing and sight, that is, from one's physical nature, is sense knowledge." [14] So far this is simply a description that parallels his doctrine of two levels of human nature. Unfortunately he added, "The knowledge of moral nature is not blinded by the knowledge

[14] *Cheng-meng*, Ch. 3, p. 11b.

of the sense" (ibid.). In this Chang, and with him other Neo-Confucianists, departed from Confucius, who valued "extensive seeing and extensive listening." In this respect, Wang Yang-ming was no different from the Sung Neo-Confucianists. No wonder Ch'ing scholars revolted against both Wang and the Sung Neo-Confucianists. In their insistence on action, they were closer to Confucius than Wang or the Neo-Confucianists of Sung times.

Following the three essays just reviewed, there is a chapter on China's recent response to Western culture ("'History' and 'Value': the Tensions of Intellectual Choice in Modern China," by J. R. Levenson) and a chapter on the evolution of Chinese art symbols ("Types of Symbols in Chinese Art," by Schuyler Cammann). These treatises may have no direct relation to the study of Chinese philosophy, but they are excellent papers in themselves. In a careful analysis, Levenson shows how China's various attempts at syncretism of Chinese traditions with Western ideas have failed. The chapter by Cammann offers an original and convincing theory that Chinese art symbols, from early symbols to the cosmic, the imperial, the auspicious, the religious, the naturalistic, the festival symbols, and to the pun symbols, "came into favor at different periods apparently as expressions of contemporary currents of thought" (p. 227).

The remaining four chapters (Arnold Isenberg, "Some Problems of Interpretation"; I. A. Richards, "Toward a Theory of Translating"; Achilles Fang, "Some Reflections on the Difficulty of Translation"; Arthur F. Wright, "The Chinese Language and Foreign Ideas") are of little significance to students of philosophy. Of possible philosophical importance is the point made by Wright that the Chinese language is "a singularly intractable medium for the expression" of foreign ideas, especially abstract ideas (p. 286). It is a fact that the early Chinese translation of the Buddhist term *dharma* as *tao*, for example, was inadequate, and the final choice *fa* is no better. It is also a fact that the early Catholics objected to the equation of *T'ien* (Heaven) with *God*, for the reason that *T'ien* does not carry the Christian idea of a Heavenly Father. It should be added that the Chinese also objected to the equation, for they rejected the idea of a personal God. Likewise, the Indian will insist that no foreign word, whether Chinese or European,

can express the true meaning of *dharma*. To him, words like "law" and "element of existence" all leave something unsaid.

One can easily think of similar difficulties. For example, to this day there is no satisfactory English equivalent for *Tao*, for neither "Way" nor "Truth," neither "Reason" nor "Moral Law" completely expresses its meaning. Likewise, *jen* defies translation. It has been variously rendered as benevolence, love, altruism, kindness, charity, compassion, magnanimity, perfect virtue, Goodness, true manhood, manhood at its best, human-heartedness, humaneness, humanity, man-to-man-ness, and even "hominity." In this volume under study, the treatise *Jen-hsüeh* by T'an Ssu-t'ung (1865-1898) is translated as *Treatise on Benevolence* (pp. 135, 164). The translation of *jen* here as benevolence must be considered defective. As I have shown elsewhere,[15] the concept of *jen* has gone through a long evolution. From the original idea of *jen* as kindness from the ruler, it was broadened by Confucius to mean benevolence, still a particular virtue but no longer restricted to rulers, and further extended by him to connote perfect virtue, which includes all particular virtues and applies to all men. In its application, it means personal love, affection, and universal love. Psychologically it was identified with man or man's mind. Under the influence of Buddhism, it became impartiality and later was understood as consciousness itself. Finally the Neo-Confucianists expanded it to mean forming one body with the universe and also the generative force of all things, namely, the process of production. As used by T'an, it denotes a universal principle which he identified with ether, electricity, the "energy of mind," and the origin of all things. It is clear that "benevolence" will not do. In fact, no single English word will.

These difficulties serve to illustrate that difficulties in translating terms, especially philosophical terms, into a foreign language will aways remain with us. But the point raised by Wright is that the Chinese language, by its very nature, is inadequate for translating foreign ideas, because of its " multiple meanings of single characters, poverty of terms of relationship (cause, etc.),

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[15] "The Evolution of the Confucian Concept of *Jen*," *Philosophy East and West*, IV, 4 (January, 1955).

ambiguities arising from unexpressed subjects, etc." (p. 296). It is interesting that in the view of Achilles Fang, these characteristics do not hinder communication. Himself an expert translator, Fang shows, through a masterly analysis of a number of passages of erroneous English translations of Chinese texts, that exactness and clarity can be found if the context, syntax, allusions, sentiment, etc. are well understood by the translator. "All the difficulties. . .," he said, "can and should be surmounted, sooner or later, by honest and earnest students" (p. 285). As to grammar, he boldly declares, "No one has ever learned to read ancient Chinese texts from analytical grammar. . . The sooner we forget grammar, the speedier will we recover our sanity" (p. 282). This means that the Chinese language, like Chinese philosophy, which is vastly different from the European, requires a new approach.

Dartmouth College.

COLLOQUIUM No. 6

REAL POSSIBILITY

PAUL WEISS

1. The self-contradictory is the impossible; whatever is possible must therefore be internally coherent.

2. Since whatever is actual is also possible, some possibilities must be ingredient in actualities.

3. Nothing will be unless it first can be. What really can be, the really possible, constitutes the future that will be.

4. Real possibilities have a being exterior to actualities. Otherwise the future would not be exterior to the present; also, there would be nothing to be realized. The logically possible (see No. 1), and the ingrediently possible (see No. 2) have, in contrast with the really possible, no being except in and for thought.

5. Real possibilities must be relevant to actualities, for they are possibilities for this universe and whatever it contains.

6. Since the things in the world change in nature, real possibilities, because relevant to them, must change as well.

7. Real possibilities are intelligible, as well as relevant. That is why there can be grounded predictions and expectations, reached through the aid of logic and mathematics from the base of the known natures of things.

8. What is possible to one object delimits what is possible to others. Because the sheep can be eaten the wolf can be nourished. Real possibilities are systematically connected.

9. Real possibilities form chains. Only because the thief was caught can he be jailed.

10. Since what ought to be is not, but still can be, some real possibilities must be norms.

11. What is not realizable in this world is an impossibility for this world; real possibilities must therefore be realizable.

12. Real possibilities are internally indeterminate. Otherwise realization would make no difference to them. To realize a possibility is to make it determinate, to give it a content and career it did not have before.

13. The determination of a possibility is beyond the control of the possibility or of present actualities. It is the outcome of a free action, an action which then and there dictates the realized nature of the possibility.

14. Every real possibility must be realized at some time. What will never be realized is excluded by the world and is therefore an impossibility for that world. There are no selections out of a range of possibilities, but only specifications of inevitably realized indeterminate possibilities.

15. Real possibilities must be controlled by a being outside the world, but concerned with the historic course of the world. Otherwise a real possibility could not at once be exterior to actualities and necessarily realized as an actuality at some time.

Yale University.

COMMENTS ON WEISS'S THESES

I

NEWTON P. STALLKNECHT

1. I agree with Thesis 1 that all possibility has definite character or internal coherence. This statement should be compared with Thesis 12. Internal indetermination need not be incompatible with definite character.

2. Thesis 2 I accept insofar as it asserts the relation of possibility to actuality to be a fundamental aspect of things. This relation is *sui generis*.

3. With respect to Thesis 3 I would say that possibility and the predictable have to do with patterns and types, not with unique individuals as such. The really possible contains the outlines of many futures. In other words, real possibility is wider than its actual exemplification at any time or at all times.

4. In opposition to the latter part of Thesis 4, I would maintain that though an actualized possibility may be distinguished within its actual context by thought, it cannot, as an actualized exemplification, be separated from this context. Still, it is a feature of this context and hence we cannot say that "it has no being except in and for thought."

5. In consideration of Theses 5 and 6, I agree that no possibility is wholly irrelevant to any moment of actuality, although of course, it may be *practically* irrelevant for me. This relevance changes as "things happen" in our actual world. I doubt, however, that such a possibility changes "in nature," although, of course, in the context of our practical thinking it may change its position and its most significant relationships.

6. Theses 6 and 7 together say that when real possibilities change there must be intelligible order in their changing or there would be no "grounded predictions and expectations." This must be considered in connection with 13 below.

7. The systematic connection referred to in Theses 8 and 9 must be subject to certain actualized possibilities that afford a basic framework. In the case of the thief's being caught and jailed, the irreversibility of time is involved.

8. I accept Theses 10 and 11.

9. Does "realization" in Thesis 12 make a difference to the possibility? Usually it does not exhaust it or remove it from future reference. Of course, the actual world exemplifies possibilities and these exemplifications are more determinate than the possibilities themselves. (See comment above under No. 1.)

10. I sympathize with the philosophy of creation proposed in Thesis 13 and I admire the way in which the notion of freedom is introduced. We must, of course, be careful to interpret this statement as consistent with other Theses, especially 3, 7, and 14, as amended herewith. I may add that my objections to Weiss's Theses in general are relatively minor when taken in the light of my acceptance of Thesis 13.

11. In the third sentence of Thesis 14 we are told that the free action mentioned in 13 does no more than contribute specifications to "inevitably realized indeterminate possibilities." But such specifications would involve a measure of selection. Free action lies within limits that determine a range of possibilities subordinate to those that are inevitably realized. The fact of limitation supports Theses 3 and 7 as amended. Selection within limits supports 13.

12. If by "world" in Thesis 15 we mean a series or system of actual events, then each one of us is outside the world, yet concerned with its course, owing to his contemplation of real possibilities and his concern for the exemplification of some of them. But I cannot accept the statement that a real possibility is necessarily realized as an actuality at some time. At this point, it seems to me, the burden of the proof rests heavily upon the author.

Indiana University.

II

JOHN WILD

1. I accept Theses 1, 2, 5, 6, 7, 8, 9 and 11 without qualification.

2. I agree with the first sentence of Thesis 3, but not with the second. Here Mr. Weiss begins to restrict the range of real possibility too narrowly, so narrowly in fact as to jeopardize genuine freedom of choice in which I believe. Courses of action I freely reject after deliberation were really possible *before my final choice*. Hence what is really possible at this time (before choice) is broader than "the future that will be."

3. I am not sure what Mr. Weiss means by "exterior to actualities" in Thesis 4. If he means relative powers and capacities in certain actual causes *now*, which *will be* exterior if and when they are realized, I can accept the first sentence. I also question whether "the ingrediently possible" has no being "except in and for thought." Of course, it no longer exists as a possibility, but it does exist apart from the mind as a realized possibility "ingredient in" an actuality. But this is probably what Mr. Weiss means.

4. I can accept Thesis 10 *if* it is understood that the norm is not *merely* a real possibility (many real possibilities are evil), but a real possibility *grounded on* a certain mode of actuality. In the light of Theses 5 and 7, I assume that this is what Mr. Weiss means.

5. I strongly object to Thesis 12. I take it that by a possibility which is "internally indeterminate" Mr. Weiss means an undifferentiated genus such as *weather*. Thus he seems to be saying that what is really possible now is *weather tomorrow*, irrespective of whether it snows or does not snow. These differences are not really possible now, but one or the other will come only with realization, which *makes the difference*.

I reject this on the ground that a genus with no difference is absolutely impossible except as the object of mental abstraction.

Abstract *weather tomorrow* is altogether impossible. What is possible is that it will either snow or not snow. If Mr. Weiss refers to further traits with respect to which *snow* is indeterminate, such as moist or dry, my answer is the same. The snow that actually falls will be one or the other. A pure snowiness that is neither cannot fall. Hence when we say snow is possible tomorrow, we do not mean the abstract genus alone by itself, but rather the genus as including any one of many possible differences. It is not the pure genus, but the genus with one of these differences and one of further subdifferences that is really possible.

It is true that our understanding of real possibilities is always incomplete and generic. But this is due not to any real possibility of realizing an abstract genus in nature. It is due rather to the limits of our knowledge. Furthermore, we recognize this by our use of concrete nouns, open to further determinations we do not yet exhaustively know, or do not know at all. Thus H_2O is not possible tomorrow. This is an indeterminate abstraction. What is possible is something fully concrete and determinate: i.e., rain (not raininess). All real possibilities are internally determinate, though we know only certain of their abstract aspects. When such a possibility is realized, nothing is added in the order of essence. What is added is the act of existing. This makes not *a* specific difference, but *all the difference*—between not existing and existing.

6. I also object to Thesis 13, which violently and arbitrarily restricts the range of possibilities. Since Mr. Weiss holds the possibility to be indeterminate, he must now explain the source of the determination which is always really present in the actual entity. This, he says, is a "free action." Let us assume this. But then what is the modal status of the determinate features of this free act before it is performed? Mr. Weiss denies that they are really possible (12). What is not really possible is impossible and will never happen. Therefore, a free act must realize what is impossible? How will Mr. Weiss deal with this question? I certainly cannot.

7. I cannot accept Thesis 14, with which freedom, as I conceive it, is radically incompatible. Such an act is one that I might

not have performed. This means that my non-performance was really possible before I made the choice. But I decided against this. Hence it will never be realized. But it *was* a real possibility (before I decided) or else I was not *free*. I infer from this thesis that Mr. Weiss does not believe in any genuine freedom of choice such as I have been describing. This freedom requires "selections out of a range of possibilities" which Mr. Weiss denies.

8. I am not clear as to the meaning of Thesis 15. But since I do not believe that any possibility is realized necessarily (in the strict sense of this term), I cannot accept it as it stands.

Harvard University.

III

ELLEN S. HARING

1. I accept Theses 1 and 2. What is possible is, in one way or another, a candidate for being actual. What is simply logically possible is coherent enough to be actual, though non-actual. What is coherent and already present in the world can be considered as though it were not yet actual, or as though it somehow retained the purity and neatness we attribute to ideas. This second sort of possibility seems to be the one Mr. Weiss calls ingredient.

2. I also accept Thesis 3. We do more than inspect conceived items for coherence, or reflect on past and present actualities. We are also concerned with what will come to pass, before it comes to pass. We are thus concerned with the future as future, but we seek in it features it must have when it is the present.

3. In consideration of Thesis 4, surely the future is other than the present, and other in a distinctive way, and is not an intellectual construct. But why must it be "exterior"? A future is incomplete, but not incomplete in any way that drives us necessarily to the exterior real possibility Mr. Weiss describes. It could be argued that the future is potencies, unexpended powers

and unaffected receptivities, and that it thus stands in need of supplementation from the outside, from something like a reservoir of eternal objects. But powers and receptivities are already under certain limitations by virtue of the current situation, and they have natures of their own. They do not do or undergo just anything, and the reasons for this seem to lie in this world.

4. With respect to the other Theses, if one holds to a theory like the one sketched above in opposition to Mr. Weiss, one has to describe real possibilities as in a way mental. That is, they have a greater definiteness in and for thought than they have elsewhere. Let us take next summer as an instance. What might be called its real foundation is present potencies. They are not, however, the comparatively definite state of things which the phrase "next summer" suggests. When I think of next summer, I am thinking of a consummation, not of the inchoate factors entering into it. I am, moreover, representing to myself a definiteness the factors have not yet assumed; at best they only foreshadow such a form. But my representation nevertheless stands for the realized definiteness of which the potencies are genuinely capable. This to-be-realized definiteness is real possibility.

Barring some minor alterations, the other Theses—except 15—seem to hold for the real possibility just described.

Wellesley College.

IV

MANLEY THOMPSON

1. The meaning of "really possible" in Thesis 3 seems to me a rather special one which we use occasionally in ordinary discourse when we wish to emphasize that the outcome of a certain situation is determined for all practical purposes.

2. Elsewhere, especially in Theses 7, 8, and 9, Mr. Weiss seems to be speaking about a different sense of " real possibility." Real possibilities are "intelligible," "systematically connected," "form chaims," and yield "grounded predictions and expectations" only in so far as the "really possible" is taken with reference to a

scientific law, or to a statement which resembles such a law. Here, the real possibility is with reference to what a law prescribes rather than to the future that will be.

3. I do not see that we can say anything of philosophic import about real possibility if we confine ourselves to the first sense alone. The perennial problems which have been discussed under such headings as "dispositional predicates," "substantial forms," "contrary-to-fact conditionals," and "causal implications" all involve, as I understand them, a reference to real possibility in the second sense. In most cases where the first sense seems to be the one intended, there is also a tacit use of the second sense. Thus, in saying that only so-and-so's election is really possible we normally tacitly assume the truth of certain laws or law-like statements. We assume that the electorate will remain firm in its prejudices and behave in a predictable manner. Without such tacit assumptions, our initial statement becomes a trivial tautology or an irrational proclamation of the future. So-and-so's election is a real possibility if he really will be elected, or is so simply because Fate has decreed that it shall be.

4. I am not clear as to how Mr. Weiss relates these two senses of "really possible" in his Theses, or how his Theses are to be brought to bear on the perennial philosophic problems mentioned above. Thesis 15 seems to epitomize my quandary quite sharply. On the one hand, a real possibility is "exterior to actualities." This accords with what I have taken as the second sense of "real possibility." The real possibility of this bit of iodine's being soluble in chloroform is external to its actual career, which may not contain contact with chloroform. The possibility is nevertheless real by virtue of the laws which specify the reaction of iodine and chloroform. But on the other hand, Mr. Weiss adds that a real possibility is "necessarily realized as an actuality at some time." This bit of iodine is really soluble in chloroform only if at some time it will actually be dissolved in chloroform. It thus seems that Mr. Weiss has used both senses of "real possibility" in the same sentence, and I am not clear as to how he relates them.

Harvard University.

V

FRANCIS H. PARKER

1. *Types of possibility (Thesis 1):* The self-contradictory is the *logically* impossible. What is logically impossible is also *really* impossible. If we do in fact sometimes entertain simultaneous self-contradictions, however, then what is logically or really impossible is intentionally (cognitively) possible—i.e., a possible object, though not a possible act, of awareness. If this be so, then whatever is logically or really possible, but not whatever is intentionally possible, must be internally coherent.

2. *God and the world (Theses 2, 3, and 15):* "Whatever is actual is also possible" (Theses 2 and 3) is true only with qualifications. Whatever is really or logically actual, but not necessarily what is intentionally actual, is logically possible in the sense of being internally coherent. And whatever *has become* really actual *was antecedently* really possible. But whatever individual has come to be really actual is now no longer really possible (though other individuals of the same type may be); it is just really actual, though contingently so. Nor does "being actual" entail "having become actual." Hence "being actual" does not entail either "being really possible" or "being contingent"; there may be a being which is actual without being either really possible or contingent. In fact, Thesis 15 seems to require such a necessarily actual being. If "world" means "realm of contingents" (i.e. all possibilities of non-logical types and their actualizations), and if "controlled" means "ontologically dependent," then I agree that "real possibilities must be controlled by a being outside the world" (Thesis 15); and I agree with the reason given for this if "realizable" is substituted for "necessarily realized" (for reasons given in No. 7 below). But if such a being actually controls, it must itself be actual (though Thesis 15 doesn't say so). And it cannot, qua controller, also be really possible, for if it were it would, qua controller, also be controlled, and qua out of the world also be in the world. Hence this extra-mundane being, though internally coherent, must be actual and not really possible.

Finally, given such a being, whether actual or not, it does not follow (though it may be true) that this being is "concerned" for the world, if "concern" connotes "awareness."

3. *Theses 5, 7, and 11:* I agree with Thesis 7, and also with Thesis 5, though "relevant" needs careful definition. Thesis 11 I take to be a tautology.

4. *Extrinsic and intrinsic determination (Theses 8 and 9):* While I agree that "real possibilities are systematically connected," I am dubious about the first two assertions in Thesis 8. I agree that other possibilities serve as *criteria* for the *mind's* determination of the nature of a given possibility, but I doubt that they are really essentially constitutive of that given possibility. The proposition that "there is only one possibility and it is definite" does not seem to me any more liable to be self-contradictory than the proposition that "x delimits, and hence is prior to, y; and y delimits, and hence is prior to, x"—which proposition is, I believe, entailed by the first sentence in Thesis 8. In short, other possibilities seem to me to be ways of knowing but not necessarily reasons for the being of a given possibility. Thesis 9 I accept and see as a species of the Thesis that "real possibilities are systematically connected."

5. *Values (Thesis 10):* I disagree that "what ought to be is not." While the meaning of "ought" does not require actual existence, it is compatible with it. My actually existent friendships are things that ought to be. It is true, I believe, that some real possibilities are norms, if there are any real possibilities; but the reason for this is not that "what ought to be is not."

6. *The ontological status of possibilities (Theses 4, 6, 12, and 13):* With respect to Thesis 4, real possibilities have a being exterior to actualities if "exterior to" means "really distinct from," but not if it means "ontologically independent of." Possibilities are ontologically dependent on actualities, as Thesis 15 requires. I agree that what is *merely* logically possible has no being except in and for thought, though the fact that logical possibility is a necessary condition of real possibility indicates that this thought is *about* reality. I do not understand what is specifically meant by "ingredient possibilities."

Theses 6 and 12 are unclear to me. I agree with what I think they intend, but the requisite indeterminacy is to me "external" rather than "internal," i.e., ontological rather than essential. A given real possibility cannot change in essence or *it* would no longer be a real possibility; to be a real possibility is to be *this* one, and this involves having an "internally" determinate nature. Indeed, to be a real possibility is to *be* a determinate essence. But the ontological status of a real possibility must be indeterminate for the reason given in Thesis 12. Consequently the emergence of new actualities alters the ontological status of one or more real possibilities and therefore the conditions of their actualization. With regard to Thesis 13, if the first proposition means that neither the given possibility nor present actualities are sufficient for its actualization, then it seems both tautological—for this is part of what is meant by a real possibility—and also contradictory to Thesis 14 (see No. 7). But if it means that either the given possibility itself or present actualities are sufficient to *prevent* its actualization, then it seems self-contradictory, for such a "possibility" would not be, at that time, really a possibility. The second proposition in Thesis 13 is not very clear to me (what do "free," "then and there," and "dictates" mean?), but I feel that something like this is probably true if there is to be any real possibility at all. Yet, and for this very reason, I also believe that it too contradicts Thesis 14.

7. *The possible and the necessary (Theses 3, 13, and 14):* While it is true that whatever comes to be was antecedently able to be, it neither follows nor is true that whatever is able to be necessarily comes to be, that "every real possibility must be realized at some time" (Thesis 14). I believe that this proposition is false because it is incompatible with the existence of real time. If x, any real possibility, *must inevitably* be realized, then x is necessary. And if x is necessary, then it is also actual. For to say that x is necessary in the future is to say that all of the conditions sufficient for x's actualization, be it through the actualization of other possibilities, are themselves actual. But if this is so then x also is actual. Any future (or past, or even temporal present) then becomes as factitious as time is for Spinoza. And if necessity of

realization should be extended to all possibilities of all types, then, by the same argument, time would be not only factitious but self-contradictory. Indeed, the proposition that "every real possibility must be realized at some time" seems even to be self-contradictory, for a real possibility which *must* be realized is also one, by the above argument, which is always actual and therefore never *actualizable* or *possible* of realization. Yet all of this is contradicted by Thesis 13 which asserts that "the determination of a possibility is beyond the control . . . of present actualities," that "it is the outcome of a free action." How can future actualizations be both "free" and "inevitable"? I do not see how or that they can. "Being possible" entails "being able *not* to be actual" as well as "being able to be actual." Hence the real world excludes what *can* never be realized but includes what *may* never be realized. An atomic war may be a real possibility, but it does not follow that it will, let alone must, be actual.

In sum, I would suggest that possibility must be taken seriously or not at all. But I am glad that I do not now have to choose between these two alternatives.

Haverford College.

VI

NELSON GOODMAN

I should consider an event to be actual if it occurs at any time—past, present, or future. Professor Weiss proposes to identify the actual future with the realm of the possible. This has two intolerable consequences:

1. Of any two statements of mutually exclusive possibilities in the future (e.g., "The Giants will possibly be champions in 1955," and "The Indians will possibly be champions in 1955"), at least one must be false.

2. No way is provided of accommodating statements of past unrealized possibilities. We are prevented from speaking of the possible loss of the championship by the Giants in 1954, or of

the possible visual experience I would have had a moment ago had I turned my head to the right.

I am delighted to see Mr. Weiss proclaiming his resolution to keep within the bounds of what I consider to be actuality; but he does not face the problem of interpreting needed statements that are ostensibly about never-to-be-realized possibilities.

University of Pennsylvania.

RESPONSE TO COMMENTS

PAUL WEISS

1. All of us seem to be agreed on Theses 1, 5, 6, 7, 9 and 11. Mrs. Haring and Mr. Parker, though, tend to view the logically possible as having a necessary reference to the actual. We must in the end, I think, say this. But when referring to possibilities as merely internally coherent no such reference need, I think, be made. Mr. Parker envisages an additional type of possibility, but this supposition seems to be in conflict with Thesis 11, which he accepts.

2. Thesis 2. Mr. Parker alone seems to hesitate here. He thinks that a being may be actual without also being possible, apparently because he supposes that its being possible would require it to be contingent. But this need not be the case. Mrs. Haring suggests that the ingredient possibility is the actual somehow purified; I think this is an advance over my original conception of ingredient possibility as a component in a larger reality.

3. Thesis 3. Mr. Wild and Mr. Goodman object to the restriction of real possibilities to the future. They think that alternatives which were not in fact realized were (and apparently still are) possible; and Mr. Goodman goes on to urge that the past still contains unrealized possibilities. But these views conflict with the truth that what the world does not allow to be actualized is not possible for that world. What decisions, actions and history exclude can be only logically possible, internally coherent, not

really possible (see below, No. 7). Mr. Thompson thinks that this Thesis is in opposition to Theses 7, 8, and 9, apparently because he sees an opposition between possibilities conceived as realizable, and possibilities conceived as exterior but relevant. The two ideas, of course, are distinct. But they are related. As he observes, the second is important and basic; but is it more so than the first?

4. Thesis 4. Mr. Stallknecht and Mr. Wild are right, I think, in objecting to my statement that ingredient possibilities have being only in and for thought. As Mr. Stallknecht remarks, actualized possibilities cannot be separated from their contexts. Mrs. Haring avoids the supposition of an exterior future by referring to potencies as subject to limitations, which may be lifted in the course of time. But since it is legitimate to refer to what the potencies "can become" we are led once more, I think, to recognize exterior, relevant possibilities—understanding by "exterior," as Mr. Parker, "really distinct from" and not the "ontologically independent of."

5. Thesis 8. Mr. Parker is inclined to detach possibilities completely from one another. But then we cannot account for the fact that it is the imminently possible death of his patient that makes the doctor actualize the possibility of the doctor's being-at-the-hospital.

6. Thesis 10. I agree with Mr. Parker that "ought" implies not "is not" but only "may not be."

7. Thesis 12. Mr. Wild, and apparently Mr. Goodman and Mr. Parker too, think that there is no possible "weather tomorrow" but only "snow or not snow." The "snow" and the "not-snow" are apparently for them distinct and completely determinate, even as possibilities. Actualization apparently can add nothing to them but "existence." What can it then mean to say that possibilities are actualized? Would it not be better then to say that they were caught in an irrelevant context? But then what shall we do with Thesis 6? More important, how is it possible, on this view, to accept Thesis 11?

Weather is "snow-or-not-snow," a single undivided possibility

whose components are not yet distinct or determinate. Actualization converts that whole into a determinate "snow" or into a determinate "not-snow." One of these will then exist, not because an "existence" has been externally added to it, but because existence then permeates it, turns it from an indeterminate prospect into a determinate present actuality.

8. Thesis 13. Mr. Wild remarks that what relates or differentiates the possible and the actual cannot, on my view, be merely possible. But this is surely true on every view. He then goes on to suppose that the difference between the actual and the possible must be impossible. That would be disastrous to maintain—and incidentally would mean, of course, that his "existence" also was impossible. We can avoid supposing that what distinguishes the two realms or types of being is an impossibility, I think, by recognizing that it is an actual relation, not preceded by its possibility, from which its possibility can always be abstracted.

9. Thesis 14. Mr. Wild rejects this for reasons given in No. 12. Mr. Parker thinks it contradicts Thesis 13; he believes the necessary realization of a possibility means that there cannot be any real time. But the necessity that a possibility be realized does not require that it be realized now.

10. Thesis 15. Mr. Stallknecht rejects this; but I do not understand then how he can accept Theses 11 and 13. Mr. Wild, having rejected Theses 12, 13 and 14 has warrant for rejecting Thesis 15, though his rejection is grounded in what I think is a mistaken view to the effect that real possibilities, before being actualized, are fully determinate. Mrs. Haring questions the thesis, apparently because it seems to lead to a non-naturalistic acknowledgment of a being outside the course of history. But that, I think, is where we are inevitably driven if we hold, as I think we must, that possibilities are necessarily realizable. This point is stated in Thesis 11, which Mr. Parker thinks is a tautology. I wonder if it is. In any case it apparently has been understood by most of us in quite distinct ways. A critical examination might well serve as a pivot for further, much needed discussion about the nature of possibility.

Yale University.

EXPLORATION

JULES LACHELIER'S IDEALISM

EDWARD G. BALLARD

JULES LACHELIER'S philosophy is worthy of attention not only historically, because of its very considerable influence in the development of modern French philosophy, but also in itself, for it presents a strenuous effort to develop a system of rational idealism through all the difficulties and paradoxes to which such systems have consistently been subject.

There can be no question but that Lachelier exercised great influence over French philosophy. Gabriel Séailles notes it [1] as do others. Boutroux remarked "il fut un excitateur singulièrement puissant des intelligences," [2] and Benrubi places him with Ravaisson in initiating the tradition of spiritualistic positivism in France.[3] Bergson also recognized and acknowledged his debt to Lachelier,[4] although the tradition which Lachelier helped to father was opposed to Bergsonianism in many important respects. The two traditions can, I suggest, be recognized as dialectical opposites of one another.

In this partly expository and partly critical paper I shall be concerned with the two problems which especially interested Lachelier. These are the epistemological and the metaphysical problems, viz., (a) What is the relation of thought to things? and (b) What can be said about that reality which is the object of thought? The writings to which references will primarily be made is the volume of papers which Lachelier himself collected and had published in 1901 as providing the best presentation of

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[1] *La Philosophie de Jules Lachelier* (Paris, 1935), pp. 149-50.

[2] *Œuvres de Jules Lachelier*, 2 vols. (Paris, 1933), I, p. xxxii.

[3] *Les Sources et les Courants de la Philosophie contemporaine en France* (Paris, 1933), II, p. 594.

[4] Cf. B. Scharfstein, *Roots of Bergson's Philosophy* (New York, 1943), p. 10 and passim.

his views.[5] References, though, will also be made to other of his papers. These writings show that in his attempt to determine his two problems, Lachelier encountered difficulties concerning the independence from the knower of the known world, the unity of the world as known, and the final ground which should enable one to assert a necessary relationship between thought and concrete reality. These are difficulties which have in the past and probably will again in the future influence philosophers to turn away from this kind of rational idealistic philosophy to an anti-intellectual philosophizing whether of the positivistic or of the Bergsonian variety. Consideration of Lachelier's struggles with his problems may eventually throw some light upon the type of philosophic effort which he represents.

For Lachelier, philosophy is primarily metaphysics, yet a metaphysics which is surprisingly closely related to epistemology. Metaphysics, whatever else it may be, consists at the least in an examination of our beliefs concerning the nature of reality.[6] According to the general run of belief, apparently, reality seems to flicker from the world of science and its objects to the more familiar realm of human life and its pursuits; finally it touches with more or less confidence upon a religious realm of spiritual reality. Lachelier examines these three claimants to reality and their relation to thought. He accepts as his constructive task to show that scientific activity and the world which science comes to know are neither of them independent and self-sufficient; rather they depend upon and assume another reality and a more characteristic human function, namely the function of pursuing ends. Finally, this human function, in its own turn, is seen not to

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[5] This volume contains *Du Fondement de l'Induction*, his doctoral dissertation, first published in 1871; *Psychologie et Métaphysique*, which first appeared in *Revue Philosophique*, May, 1885; *and Notes sur le Pari de Pascal*, which appeared in the same review, June, 1910. All the writings which he wished to have published were collected in *Œuvres de Jules Lachelier*, 2 vols. (Paris, 1933); references in this paper will be to the collected works.

[6] "La philosophie me paraît être essentiellement . . . la métaphysique; et la métaphysique est, selon la définition d'Aristote, la science de l'existant en tant qu'existant τοῦ ὄντος ἢ ὄν . . . . la science de la pensée en elle-même et dans les choses." *Œuvres*, II, pp. 203-04.

be self-sufficient either, but depends upon a still higher, intelligible and genuinely self-sufficient reality. Human action, human curiosity and the thought which strives to satisfy it, move naturally from the former of these levels and its appropriate activity to the latter. Lachelier refers to this motion as a "living dialectic." Its three levels or steps are discussed more or less separately in the three treatises of the 1901 volume.

Lachelier makes no pretense to examining the whole of the fields of science, humanity, and religion. Rather, in this pursuit of classic brevity, he singles out in each of these fields that which is crucial. The critical problem for science, that upon which its very possibility as science rests, is the problem of induction. The sine qua non of human life, he holds, is the apprehension of value and the pursuit of ends. Finally, the essence of the religious life is the sharing of a common life through reason with a being superior to man. He therefore centers his attention upon these three: induction, the pursuit of ends, and the life of reason. He believes, moreover, that the natural tendency of human life and human interest is to move from the first of these to the last, and his dialectic is intended to imitate this natural movement. During the course of this paper we shall follow the dialectic by which these three are evaluated and related each to each.

I

Paul Janet finds fault with Lachelier's treatment of the problem of induction, saying that he gives a metaphysical answer to a logical problem.[7] Lachelier does appear to phrase the problem in semi-logical terms. Induction, he writes, "is the operation by which we pass from knowledge of facts to knowledge of laws which order them." [8] But he quickly points out that the problem of explaining the logical movement from the particular to the universal is at the same time, where a science of facts is concerned,

[7] *Les causes finales*, 1877, Appendix I.

[8] *Du Fondement de l'Induction* (hereafter to be referred to as "Fondement"), *Œuvres*, I, p. 19.

also a movement from the contingent to the necessary. And the latter movement does present a metaphysical rather than a logical problem. The difficulty is to understand how and why the subjective order or logic [9] apprehends and corresponds necessarily with the objective order. The first step toward finding out why this correspondence should hold is to find a brief and adequate description of objective reality and its order.

Only three ways exist for finding principles which will enable us to deal with this difficulty.[10] One is by beginning with the objective world, as J. S. Mill does, and seeking its principles through induction. This procedure, though, merely begs the question. The second is to begin with the subjective, with intellectual intuitions, and to use these as principles for explaining all of experience; this is the program of Victor Cousin and the Scots philosophers. If there are any such intuitions, however, they are like all intuitions, incurably particular. Hence, they may provide data for induction but scarcely the foundation or principle of induction. The present method, then, will have to be the third or Kantian procedure of seeking, through a reflexive act of examining the knowing process, the principles which render possible and actual the world as we know it. This procedure may not provide us with knowledge of a world beyond experience, but this limitation ought to be taken as a mark of its discipline. Lachelier remarks more than once that a nature outside of and beyond thought "would be for us as if it did not exist." [11]

We conceive law by perceiving phenomena as subsumed under law. In order adequately to grasp this relationship, we

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[9] Lachelier notes three meanings of "logic" which correspond with three senses of "truth." They are (a) "une vérité objective, intrinsèque, des choses," (b) une vérité "subjective . . . qui est la conformité de nos pensées aux choses telles qu'elles existent en elles-mêmes"; (c) "une vérité, ou plutôt une nécessité de penser, purement hypothétique, qui consiste en ce que telle chose étant supposée vraie, . . . telle autre, qui s'ensuit, doit être tenue aussi pour vraie" (*Œuvres*, II, pp. 192-93). The problem of induction requires the determination of the relationship of the second of these meanings to the first.

[10] "Fondement," *Œuvres*, I, 45.

[11] Ibid., p. 77; cf. also p. 60 and "Le Pari de Pascal," *Œuvres*, II, p. 51.

must first understand the nature of the phenomena perceived. According to Lachelier's analysis, all perception involves the activity of adding the ideas of succession and externality to sensation. The external world is perceived as extended, but extension is not perceived. Extension, as we are aware of it, is built up primarily from experience of vision. It is a synthesis of continuous eye movements. Men born blind, he argues,[12] cannot experience the ordinary apprehension of extension. Time, similarly, is a construction of the mind. In *Psychologie et Métaphysique* he adduces a number of arguments for his belief that space and time are un-real in themselves but are derivative and mind-dependent.[13] This is an important conclusion, and much of the validity of the following views depends upon its soundness. For if the world as perceived is in space and time, and if space and time are "in" the mind, then the rest of the world shares in the derivative nature of their reality. The laws which hold in the physical world, then, must be founded in the mind from which that world is derived.

His view of the mind up to this point, i.e. at the level of sensation, is that it performs a dual function. (a) It produces the perceived world by a kind of "projection" [14] and thus forms

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[12] Cf. "L'Observation de Platner," *Œuvres*, II, pp. 68-104.

[13] Lachelier wishes to prove that perceived extension is not real in itself but is derivative from consciousness. He notes that any part of extension is divisible into parts, each of which is similary divisible to infinity. In this analysis no real, i.e. no indivisible, elements are ever reached. Hence, space is not composed of real elements; hence, it is not real . . . Let us assume, then, that it is composed of elements of some non-spatial sort (monads?) which, when perceived, give the illusion of extension. Then these elements cannot be said really to be in this illusory space. In any case, this extension or space, being an illusion, is in consciousness—which is what was to be proved. From this point he moves to a metaphysical conclusion: "La réalité de la conscience est donc hors de doute, puisque ce monde extérieur dans lequel on voudrait la résoudre ne peut, au contraire, exister qu'en elle" (*Psychologie et Métaphysique* (hereafter to be referred to as "Metaph"), *Œuvres*, I, p. 189). This conclusion is evidently also a consequence of the Kantian principle alluded to above: "On ne peut donc pas dire que la nature soit absolument extérieure à la pensée, puisqu'elle serait alors pour nous comme si elle n'était pas ("Fondement," *Œuvres*, I, p. 77).

[14] La sensation "remplit l'étendue et constitue les choses extérieures" ("Metaph," *Œuvres*, I, p. 191).

"toute la réalité de l'objet." [15] And this production of the world is executed through what is termed the unconscious and "permanent acts of the mind" which make the world a "permanent mirage." [16] Its externality arises, apparently, owing to its contrast with the other function of sensations. (b) Sensation also has an affective dimension.[17] This additional dimension is evidently the same thing which Whitehead has called the feeling of the "withness of the body." These are the affective and visceral feelings by which we are aware of our bodies and in some degree also of ourselves. These feelings arise as a result of our experiencing the world which we have already projected into space and time. The double function of consciousness at the level of sensation, then, is to project the world according to its own laws, and to experience it as thus projected.[18]

Several questions present themselves at this point. We may ask how the world is projected thus. Lachelier has no answer to this at all, except to reiterate that somehow it is projected. We may ask how we can know that it is a permanent mirage and not variable from person to person and from time to time. In answer to this question he propounds a very Kantian theory of objectivity which will be considered below. Is this objective world also the concrete and real world required by metaphysical theory? Finally, one may wonder, why is the world projected into an illusory externality? These last two difficulties are not tackled at this juncture, but they recur later. The point is that this world projected and operating according to laws derived from the human mind offers the kind of ground which Lachelier feels must be had if a rationale for induction is to be found.

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[15] Ibid., p. 193.

[16] Cf. a question (put by Bouglé to Lachelier): "Les lésions d'une certaine portion de ce cerveau ne feraient-elles pas disparaître une partie du monde extérieur"? Lachelier: "C'est qu'alors une portion de l'activité inconsciente qui produit tout a été atteinte," (*Œuvres*, I, p. xxxvii).

[17] "Metaph," *Œuvres*, I, p. 193.

[18] Cf. "Fondement," *Œuvres*, I, p. 50-52.

II

Lachelier's treatment up to this point of the metaphysico-epistemological problem enabled him to utilize certain properties of this internal-external world as principles of induction. He notes that the world as perceived is a multiplicity. Objects and times are different from each other; moreover, both appear to be different from the knowing subject. Yet our sciences with their mass of successful inductions persuade us that this whole is somehow a unity. How can we know that it is a unity? And how can we know what the nature of this unity is? If we can find one form reproduced in the multifold aspects of the world, then we may hold that the world possesses this unity of form. An indeed this one form is not difficult to recognize in that necessary relation among phenomena [19] without which neither the sciences nor common sense could exist. He identifies this necessary relationship among phenomena as the relation of efficient causality. If one phenomenon is the reason for the existence of another, then the two are not distinct but are two moments of one continuous unity.

Lachelier reasons that the universe actually is a single history of thoughts and events continuously and necessarily being transformed into itself,[20] and this necessity is expressed in the law of efficient causes. He proves this point in Kantian fashion. The universe is intelligible; that is, it is a unity for thought. But it can be a unity for thought only if it is unified by a law which holds necessarily for thought. Now we can see that we are presented with exactly this condition when we recognize that the law of efficient causality which orders the physical world is nothing other than the spatial analogue of deductive thought. And deductive thought or logic is, as it were, the law of the mind. Here, then, is the reason for the correspondence of the

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[19] "Si chaque phénomène se produit dans les conditions absolument invariables, il est clair qu'il suffit de savoir ce que les conditions sont dans un cas pour savoir par cela même ce qu'elles doivent être dans tous" ("Fondement," *Œuvres*, I, p. 26).

[20] "Fondement," *Œuvres*, I, p. 52.

objective physical order with the subjective order.[21] These are not really two separate orders. There is the primary subjective or logical order, and then derivative from this and dependent upon it is the objective or so-called external order. The latter mirrors the former since it is produced by the former. We know, therefore, that inductively discovered laws of nature hold necessarily, since they are specific expressions of that logical necessity which determines at once our world and our knowledge. Further, since we can think only in a logical way, the world can appear to us only as ordered by efficient causes; then we may conclude that this law holds a priori.[22] In virtue of this a priori law, other more specific laws may be induced and known to hold necessarily —errors in the actual inductive process being put to one side.

Thus, the objectivity of this world is a function of the regularity of the movements which constitute it, and this regularity in turn is a reflection in space of logical necessities of the mind.[23] Further the stable world of commonly perceived objects and the world of movements conceived by the scientist are both within space and time. But, as we have noted, space and time are constructs of the mind. The world, then, owes its objective reality to the mind. The mechanism of the universe is a translation of the logic of thought into sensations. It is not difficult to assume further that all rational beings think in the same way, at least when they think logically. It follows that the logically unified and objective world is the same for all.

This unrelenting rationalism is a salient characteristic of Lachelier's thought. No doubt he would accept the fact that the more mature sciences are increasingly being codified logically in terms of axioms and theorems as supporting his position. And, moreover, I do not believe that he would be disturbed by the opinion that any world whatsoever might be interpreted according

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[21] Ibid., pp. 51-52, 56.

[22] Ibid., p.57.

[23] Cf. "Des sensations débandées sont des rêves, des sensations qui marchent en rang serré sont des réalités." Quoted by Séailles, op. cit., p. 129, from *Théodicée*, leç. ii, cours inédit. This interlocking, produced by the intellect, is the source of objectivity. Cf. also "Fondement," *Œuvres*, I, p. 76.

to some rational schema through an apt choice of elements and relations within it. He would merely reply that such a world, reflecting the exigencies of logic, is precisely what he means by mechanism. He might even utilize this criticism as part of his argument that the objective world is mind-dependent.

The foundations of induction are, as yet, only partially apprehended, for in the first place the law of efficient causality is adequate to account for only a more or less simple series of efficiently interlocked phenomena and has nothing to say about the cooperation of a number of such series in the regular production of a complex phenomenon such as an organism.[24] Likewise, and on the metaphysical side, we have not yet indicated whether other than specifically logical aspects of thought are reflected in the universe or whether they are related to the ground for induction. These two questions are involved in each other and can be considered together.

One of the articles of faith which probably must be accepted if thought about the world is to reach conclusions which must hold true about the world is the faith in the permanency of species.[25] The directions and speeds of many small particles are efficiently caused in such fashion as to produce and maintain with consistent regularity many individual examples of a type of objet or organism. The nature of a chemical compound, of a botanical or animal species, is reproduced regularly in numberless particular instances by the cooperation of such series of mechanical causes. Inductions regarding the nature of these complex objects requires a principle explanatory of this cooperation. We must assume in order to explain the stability of the world and the knowledge which we do have of it, that causes are organized so that they will reproduce under the same conditions the same complex at a given time and place. The complex object, that is, contains the reason for its being just this characteristic combination of simple phenomena. More abstractly put, the whole contains the reasons for its parts. Thus the whole is prior to its parts. Just

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[24] "Fondement," *Œuvres*, I, pp. 27, 77.

[25] "Le Pari de Pascal," *Œuvres*, II, p. 50; "Fondement," *Œuvres*, I, pp. 27 and 69-71.

this expression, though, sums up Kant's definition of final cause.[26] The parts are means to the whole and cooperate to produce it. It is a fact that certain types or kinds of objects are permanent. This permanency is inexplicable without the principle of final cause. Thus the principle of final cause is the factor needed to round out the requirements for founding inductions. And as we are unable to think about nature and explain the knowledge which we do have about it without this principle, this principle is justified, as the previous one was, at least as a regulative idea.[27]

The law of efficient causes relates a phenomenon to the past events which produce it; the law of final causes relates it to its future. The law of efficient causes is explanatory of the possibility of an object; the law of final causes accounts for its organization or the kind of object which it is.[28] Both together are required to justify our knowledge of its actual nature and its unity.

Furthermore, this distinction between the mechanistic and final aspects of nature is grounded in a distinction in our faculties of thought.[29] We are aware of the character of finality, of decision and pursuit of ends, in our own life and purposive activity. Our thought concerning the teleological character of nature is analogical, perforce, to our own acts of will and conduct of life. We cannot, however, think without use of "directive ideas," as Claude Bernard called them, or tendencies organizing movements. We must, therefore, extrapolate our experience of willing beyond the limits of personal experience in order to grasp the objective and communicable aspects of dynamic experience. Just as we find the logical necessities of thought reflected in the mechanical unity of nature, so we find the experience of will reflected in the dynamic unity of nature.[30] Again, as mechanism is reducible to movements

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[26] "Fondement," *Œuvres*, I, p. 75.

[27] Ibid., p. 76.

[28] "Car ce que l'on appelle de ce nom (être) surtout lorsqu'il s'agit d'un être vivant, est précisément un groupe de phénomènes qui gravitent en quelque sorte autour d'une fin commune" ("Fondement," *Œuvres*, I, p. 77).

[29] Idem.

[30] Ibid., pp. 73-74.

efficiently related to each other, so finality is reducible to forces which tend to an end by organizing movements into complex phenomena. Evidently, the more fundamental of these two laws is finality. An end, a complex object in nature, is the reason for the existence of the movements which compose it. Mechanistic thought is radically incomplete, being involved in an infinite regress in both its beginning and its terminal directions.[31] But thought about nature which utilizes the principle of finality achieves completeness; thus the real reasons in nature are ends. Each end is an absolute, a terminus for thought.

Mechanism being the spatialization of deductive thought, mechanistic thought is peculiarily satisfying, for it admits of deductive systematization. Nevertheless, it is always incomplete in itself. It is completed only by being subordinated to finality. The law of final causes, however, is not deductively demonstrable, for it is not mechanistic; rather it is added by an act of the will creating, at it were, a moral dimension in the universe, without which its mechanistic dimension is without a reason for being. Matter, cause, movements, are projected by the mind into space and time for an end, for the sake finally of harmony and beauty. A mind constrained to think spatially and temporally and withal logically, as ours is, could project its thoughts into no other than a mechanistic universe. Furthermore, no other than a mechanically regular universe would provide a reliable means to natural ends or to the ends which we will. For reasons such as these, therefore, mechanism is concluded to be not a fundamental but a derivative order. It is contingent upon harmony and the good.[32] That mechanism should appear to so many to be the more basic mode of thinking is a curious fact. Evidently our minds, when unsophisticated, invert the natural order of dependence [33] and regard mechanism as fundamental. Nevertheless, it may be pointed out that this habitual inversion is scarcely

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[31] Ibid., pp. 78-79, 84.

[32] Ibid., p. 77.

[33] "On est bien obligé de convenir qu'elle n'est qu'une illusion de notre entendement, qui renverse l'ordre de la nature en essayant de le comprendre" (Ibid., p. 80). By use, however, of the "reason" this error of the understanding is corrected.

unexpected, for the development from mechanism to finality is not a logical movement. It is the product of an evolution whose direction we can divine but not predict with certainty.[34] This being so, the reader will doubtless wonder what kind of unity he should expect to find in Lachelier's system. This is precisely one of the difficult problems which his thought raises.

In the present stage, the unity of Lachelier's metaphysics appears to be, at best, an abstract unity. We know at this point, only two basic laws: the law of efficient causes, which enables us to infer that given the same conditions the same result will follow, and the law of final causes, which enables us by a kind of imaginative "divination" to reason that results of a given kind will follow upon the cooperation of phenomena under complex circumstances. Each of these laws provides reason for asserting a kind of unity in the world. How, though, can we be assured that these two laws both refer to one and the same world? We cannot deal further with this question, however, until another and pressing problem, which has arisen in the course of previous reasonings, has been considered. For we need assurance that this world, now apparently reduced to states of consciousness, albeit permanent and objective states, and ordered by rather abstract laws, is still the world of concrete reality and human experience. This is a problem which seems inevitably to follow upon defining being in terms of knowing. We may be assumed to know laws, but laws are relations, and relations are abstract. What, then, are the relata? Or better, what is the concrete situation which laws render intelligible? The next step in this dialectic develops into a reflexive analysis which seeks to discover concrete reality within thought, for Lachelier has no wish to practice philosophic day-dreaming and to weave theories whose relation to reality is tenuous or illusory.

III

The reflexive method, developed in *Psychologie et Métaphysique*,[35] seeks in internal experience for an independent and ultimate

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[34] Ibid., p. 71.

[35] Lachelier distinguishes psychology as the empirical study of sen-

reality and then, building on this, attempts to reconstruct the concrete world, at least in principle, within which the laws heretofore established can reasonably be applied. Lachelier argues, as I have already pointed out, that the distinction between that which is external and internal to the self is not a basic dichotomy but that, on the contrary, the external is definable in terms of the internal and that the external is derivable from the internal. It is, therefore, necessary to come to an understanding concerning the nature of this internal self or mind, for this is the most promising avenue through which we can move to a grasp of concrete reality. The general direction of Lachelier's doctrinal development is indicated by the following remark: "Since the world exists because it is thought, *a fortiori* thought exists and in some fashion causes the existence of everything else. Thought is not a being, it is being itself . . . The unknown substance, the supreme cause, is nothing other than thought, the self in its absolute power of knowing and willing." [36] In reaching this conclusion Lachelier makes a non-explicit use of two principles. They may be expressed in this way: If X is affirmed or denied, then (a) X is distinct from that which affirms or denies it, and (b) this X is limited and dependent compared with that which affirms or denies it. These two principles are applied in his determination of the nature of the self.

Certainly the self cannot be another mechanism, for the self can understand mechanism, can affirm its truth, and thus is different from or free from it. If it be suggested that the self is sensation, then it is to be noted that we enjoy sensation. This enjoyment is an affirmation of it; then we who affirm sensation are other than it and relatively independent as compared with it.[37] Similarly the inclination to enjoy sensation is frequently denied by the moral will. Then the moral will is other than and

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sitive and affective phenomena from psychology as the study of the nature of thought and of the self. The term is used in the second sense in this title.

[36] Quoted by Séailles, op cit., p. 61, from *Logique*, leç. xv, cours inédit, "De la conscience pure de soi-même."

[37] "Metaph," *Œuvres*, I, p. 193.

superior to this inclination. Perhaps then this will is the self.[38] This suggestion would seem to be a likely one, especially since the moral will includes all that we mean by temperament and character, and is the "organ" of finality in man which has always been most closely associated with the self. Nevertheless, this notion of the nature of the self is not complete; it omits the factor of awareness and intelligence. This awareness is quite other than any of the functions mentioned up to this point. The awareness of pain is not painful but true [39] and communicable. Thought is consciousness not merely of things but of the truth of things. Animals possess will. Only the human self possesses intelligent consciousness which is at once the source of the objectivity of his world and of his recognition that he is different from it.

This pure thought, this spontaneity of mind, the source of the objectivity of our world, appears to be the self, or at least to be that aspect of the self which is an ultimate element of this analysis. Nevertheless, this self returns us to the problem already partly discussed. Is this a concrete element? Evidently Lachelier thinks it is. Does it, however, leave us with the concrete world from which we started? We may accept the conclusion, already considered, that the intellect is the source of objectivity; but objectivity is not concreteness. To be assured that this apparently rarefied metaphysical analysis is still dealing with reality, as its purpose requires, Lachelier proceeds to a metaphysical synthesis, from this point, of the real world.[40]

This synthesis is composed in the high and grand style of speculation and is, no doubt, the passage responsible for M. Parodi's evaluation of *Psychologie et Métaphysique* as "perhaps the boldest metaphysical writing which French thought has produced since Malebranche".[41] There is no need to reproduce here Lachelier's construction of the three powers of being which constitute the self and which are the source of its several kinds of experience. It is worth noting, though, as part of our effort to

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[38] Ibid., pp. 193-94.
[39] Ibid., p. 201.
[40] Ibid., pp. 208-19.
[41] *La Philosophie contemporaine en France* (Paris, 1920), p. 140.

identify the kind of unity presented by this system, that the guiding analogy in this construction is evidently the subject-predicate proposition. This is not extraordinary, since Lachelier's system is thoroughly rationalistic in temper. We think in propositions, he would hold, and it is not unlikely that the nature of thought itself is expressed in the elements and operations of logic.

In the fundamental proposition, "Being is being," Lachelier finds that the predicate expresses abstract possibility, such as is given a more specific expression in the mechanistic science of nature. Thought, however, is not content with entertaining this abstract knowledge, and it tends to move on to concern itself with the concrete object to which, indeed, its abstract knowledge refers. The concrete object is represented in the subject of the above proposition. This spontaneous movement of the mind toward the concrete is a movement toward an end, exemplifying the will to live, the finality, which earlier considerations have shown to be an essential character of the real world. Here, it is argued, the will is the very source of the concrete world. It organizes its parts on the various levels of existence and thus makes the world to become what it really is. The third power of being is exemplified in the verb of the proposition which united predicate and subject, abstract and concrete, mechanism and finality. This third power of being, the pure activity of thought synthesizing its experience, comes to self-consciousness in man. At this point thought recognizes itself as the ultimate explanation of and ultimate source of all its experience. It knows itself to operate by its own intelligible laws restricted by no other necessity and by no other purpose. Operating thus according to its own rational laws it is appropriately called free. It is liberty and spirit [42] itself, of which

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[42] "On peut appeler d'une manière générale, *spiritualisme*, toute doctrine, qui reconnaît l'indépendance et la primauté de l'esprit, c'est-à-dire de la pensée consciente . . . Mais il y a un spiritualisme plus profond et plus complet, qui consiste à chercher dans l'esprit l'explication de la nature elle-même, à croire que la pensée inconsciente qui travaille en elle est celle même qui devient consciente en nous, et qu'elle ne travaille que pour arriver à produire un organisme qui lui permette de passer (par la représentation de l'espace) de la forme inconsciente à la forme consciente"

the universe is the expression and the symbol. It recognizes itself as a unity which is expressed in many ways. The "external" world, being its expression, is therefore also a unity; thus mechanism and finality are joined through spirit.

Being or self, then expresses its powers in three stages: necessity or its shadow; will or its body; reason, liberty, or spirit which is its very identity.[43] Lachelier holds that each stage is the condition of the following one and that the movement to the following stage is a natural movement. Already we have noted, in considering the relation of mechanism to finality, that this movement is not a logical progression. The present use of liberty or spirit to unite necessity and will, or mechanism and finality, indicates, it seems to me, Lachelier's awareness that the evolution from one stage to the next argues a loose unity, a looser unity than one might expect to find in a thorough going rational system. The first two powers of being are united by the third, freedom, in a manner apparently analogous to the union of predicate and subject of a proposition. But in this instance the proposition is evidently synthetic. Lachelier does not provide anything parallel to Kant's arguments for establishing the unity of experience and the unity of the synthetic propositions which reflect the unity of experience. Evidently, though, freedom is the "X" which somehow combines mechanism and finality, abstraction and reality. Are, then, mechanism and finality both forms af freedom? This is conceivable. If so, then does finality include mechanism? Are they coordinate? Or what, in fact, is their relation? Lachelier provides no precise answer. He is content to think of the relation among these three powers in dynamic terms, and refers to the movement up the scale [44] toward freedom as a "living dialectic," suggesting that these is a creation of something new at each stage which was not present in the previous one. Evidently a creative metaphysical nisus for liberty

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(*Œuvres*, II, p. 221). Lachelier attributes this latter kind of spiritualism to Ravaisson; it certainly is also his own.

[43] "Metaph," *Œuvres*, I, p. 213.

[44] Cf. "Fondement," *Œuvres*, I, pp. 75 ff., where a kind of metaphysical evolution is sketched.

is assumed in this system and probably ought to be accorded a more explicit notice than is actually given it. The three powers of being can express themselves only by projection of the space-time world and developing in it through sensation and will toward liberty. One may ask why this development should occur and take just this form. The answer which appears to be implicit in Lacheliers's writing is nothing more than that being does in fact have these three powers and that it is good they should be actualized. Whatever the further justification of this position, it holds that liberty is the goal of all development and that this end is realizable in man. Lachelier remarks: "In the natural order, the development of nature can only be explained by the needs of the will to life. Bergson was right up to here. But in man the order of nature is reversed; intelligence becomes the end. From this point on, will is nothing more than a *scabellum pedum tuorum*. In this respect humanity is indeed nature's end. In humanity nature becomes conscious of herself and thinks herself with clarity." [45]

This final end or good which is thought or liberty of spirituality does not sound quite like the concrete reality in which a metaphysically minded philosopher might have been expected to found his system. Thought, one would suppose, is incurably abstract, no matter how free it may become. Lachelier, however, it must be understood, identifies knowing and being.[46] The powers of being which function through the faculties of the mind are the categories at once of being and of thought. Thought is spontaneous and doubly productive activity, creating that in which it is expressed by "des actes permanents de la conscience" [47] as well as that which is expressed by will and intelligence. Hence, Lachelier could write, almost with an Existential emphasis, "it must not

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[45] *Œuvres*, I., p. xxxvii.

[46] "La véritable philosophie de la nature est . . . un réalisme spiritualiste, aux yeux duquel tout être est une force et toute force, une pensée qui tend à une conscience de plus en plus complète d'elle-même ("Fondement," *Œuvres*, I, p. 92). Cf. also "Metaph," *Œuvres*, I, pp. 218-19.

[47] Ibid., p. 215.

be said that we affirm ourselves to be such as we are; but on the contrary we are that which we affirm ourselves to be." [48]

This philosophy, apparently, does not attain to anything more concrete than thought. The absolute and spontaneous thought with which the system culminates and in which it is founded must not, however, be confused with the rationative processes of an individual man. Were this the case, his system might indeed be a mere empty abstraction. The full import of thought becomes more evident in his religious philosophy. In an individual's best thought, he not only thinks God's thought after him, but he even becomes one with God. For God and absolute thought or liberty are identical. Lachelier argued [49] that the traditional cosmological and ontological arguments for the existence of God make no sense if they are supposed to imply the existence of something outside of and beyond thought. Properly understood they point to the existence of an absolute thought beyond our usual individual thinking but a thought in which we can participate if we realize our destiny or the nisus of our being for perfect liberty. Such a self-subsistent thought, however, will recall inevitably the Christian doctrine of wisdom even to one who did not know that Lachelier was a practicing Catholic throughout his life. But this concrete wisdom, this thought which is being, is beyond our discursive intellects and is to be grasped by a use of "reason" which appears to be intuitive and almost super-rational.[50] No doubt this mystical participation

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[48] Ibid., p. 217.

[49] "Trois Articles sur l'Idée de Dieu et les Nouvelles Critiques de E. Caro," *Œuvres*, I, pp. 3-17.

[50] Bouglé records Lachelier's distinction between understanding and reason: "Il importe d'ailleurs de distinguer l'entendement, faculté des idées claires et du mécanisme, de la raison, faculté par laquelle nous saisissions l'essence vivante des êtres. Un monde qui ne satisferait que l'entendement serait un monde tout mécanique et comme mort" (*Œuvres*, I, p. xl). And Brunschvicg records remarks made by Lachelier which sound like the product of this reason: "Il me semble quand je suis à Fontainebleau, que je sympathise de toutes mes forces avec la vitalité puissante des arbres qui m'entourent. Quant à reproduire jusqu'à leur forme, je suis sans doute trop encroûté dans la mienne pour cela; mais, en y réfléchissant bien, il ne me paraît pas déraisonnable de supposer que toutes les formes de l'existence dorment plus ou moins profondément ensevelies au

would be the kind of unity with a superior being to which the temporal world is a means and which is the final object of the will . . . And here the question may be raised in passing concerning the extent to which faith in so superior a being is consistent with the Kantian tenet that anything outside our thought is as if it did not exist for us.

For the thought which is the real and concrete foundation of the universe and which has been pursued throughout this idealist philosophy, is finally within sight only at the point where it can no longer be grasped by the intellect. Thought is concrete only if it be allowed that there is more to thought than thought is able to understand.[51] That this culmination of his philosophy actually moves beyond the limits of philosophy is clearly recognized by Lachelier. He writes, "The highest problem of philosophy, which is really more religious than philosophic, is the movement from the formal absolute to the real and living absolute, from the idea of God to God himself. Since the syllogism fails us here, let faith run the risk. Let the ontological argument give way to the wager." [52]

At least it is clear that Lachelier moves far beyond the minimum tenet of idealism, which would maintain that nothing can be known to exist unless it be perceived or thought, to the complex

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fond de chaque être; car sous les traits bien arrêtés de la forme humaine dont je suis revêtu, un œil un peu perçant doit reconnaître sans peine le contour plus vague de l'*animalité*, qui voile à son tour la forme encore plus flottante et plus indécise de la simple *organisation:* or l'une des déterminations possibles de l'organisation est l'*arboréité*, qui engendre à son tour la chênéité. Donc la chênéité est cachée quelque part dans mon fond, et peut être quelquefois tentée d'en sortir et de paraître à son tour *dias in luminis oras*, bien que l'humanité, qui a pris les devants sur elle, le lui défende, et lui barre le chemin" (*Œuvres*, I, pp. xviii-xix; italics Brunschvicg's). The same reason which achieves such intuitive apprehensions as this one, is the organ by which we are to enter into religious communication with the source itself of intelligibility; cf. "Le Pari de Pascal," *Œuvres*, II, pp. 53-56.

[51] It is interesting to compare this terminal point of Lachelier's rationalism with a remark which he made about Kant's antinomies. He refers to " . . . ce paradoxe de la langue de Kant, que l'*intelligible* c'est-à-dire le propre objet de notre intelligence, est précisément ce qui échappe à toutes les prises de notre intelligence" (*Œuvres*, II, p. 210).

[52] "Le Pari de Pascal," *Œuvres*, II, p. 57.

and difficult metaphysical position which holds that kinds of being are derived from, and essentially are, kinds of thought. Thus, there are kinds of being derived from and correlated with perception, intellect, practical thought, and reason. Scarcely are all the problems involved in this derivation solved. We have noted certain internal difficulties: the problem of explaining the external in experience in terms of the internal, and the problem concerning the nature of the unity in this system of philosophy. Its most difficult problem, however, concerns the terminal paradox, the effort to explain the final good and foundation of the whole system as a concrete being which is also thought. Lachelier is always faithful to the critical principle: that what is beyond thought and experience is the same to us as the nonexistent. Under the guidance of this principle, he has moved from a commonsense assertion that the universe is intelligible to us, an assumption which he required in order to establish the laws of efficient and final causes, to a reaffirmation of this assumption as the foundation both of thought and af existence: the universe is thought in its nature and in its source. Owing to this equivalence of thought and existence, the epistemological and the metaphysical problems coalesce and are solved at one and the same time. Thought projects itself as the reality in which we live and according to an order which we find again in our experience and knowledge. But the way in which these two seemingly different things, thought and concrete reality, are one can be grasped, it seems, only through religious insight. Thus the philosopher is forced to go beyond philosophy in order to solve his fundamental problem.

Lachelier's thought is certainly not without virtue in persisting through difficulties, sometimes even in spite of them, and in facing its paradoxes. Nevertheless, in a professedly rationalistic philosophy whose first principle is thought, these difficulties and paradoxes may be looked upon as deficiencies, but deficiencies which may in the end, perhaps, be construed as being native to this type of thinking. A Bergsonian, at least, would hold that this kind of philosophizing is necessarily and inevitably deficient because he would hold that clear concepts are radically abstract and can never provide us with an adequate apprehension of

reality. But the deficiencies in its turn of this Bergsonian type of philosophizing, which would proceed by some sort of intuitive and perhaps incommunicable method of contacting the real world, are well enough known. Perhaps, then, in the end, we may expect these two kinds of philosophy to become dialectical opposites and that the findings of each will limit and finally be harmonized with the other. Thus each may complement the other's lack. Perhaps a suggestion of this sort may be read into Bergson's graceful gesture of dedicating his Doctoral thesis to Lachelier.

Tulane University.

ANNOUNCEMENTS

The Metaphysical Society of America elected the following officers at its annual meeting held March 25-26 at the University of Chicago: President, Newton P. Stallknecht of Indiana University; Secretary, John E. Smith, Yale University; Treasurer, Richard Barber of Tulane University. Raphael Demos of Harvard University was elected to a three-year term as Councillor.

John A. Mourant, Professor of Philosophy at Pennsylvania State University, was elected President of the Southern Society for the Philosophy of Religion at the Society's March 5 convention in Roanoke, Virginia.

A Colloquium on contemporary British philosophy, organized by the British Council with the support of the Sub-Faculty of Philosophy in the University of Oxford, will be held at Brasenose College, Oxford, from September 13 to 25, 1955. The theme of the Colloquium will be "the new approach to philosophical problems which has been a characteristic of British philosophy in recent years." Papers are to be read by Oxford philosophers, and are to be followed in each case by a full discussion. The sessions will be directed both to the discussion of recent British philosophical methods and to the illustration of these methods in the treatment of particular questions in metaphysics, epistemology, logic, and ethics. Further information about the Colloquium can be obtained from the Director, Courses Department, The British Council, 65 Davies Street, London, W.1, or from any local Representative of the British Council.

An International Congress of Philosophy will be held at Stresa, Italy, from July 20 to 25, 1955, in honor of the Italian philosopher Antonio Rosmini on the occasion of the centenary of his death. Professor Michele Federico Sciacca of the University of Genova is General Secretary of the international committee which is organizing the Congress. His address is c/o Instituto di Filosofia, via Balbi, 6, Genova, Italy.

Ideas, a journal devoted to the publication of student papers on philosophical subjects, will be edited, beginning in the Fall of 1955, by a group of Yale University graduate students headed by J. L. Darlington and D. C. Berggren. The journal has been published for the past year by graduate students at Duke University. The new editors plan to put out four issues annually, and subscriptions are to cost $1.00 per year. Students, both graduate and undergraduate, are invited to submit manuscripts for consideration for publication. All correspondence should be addressed to the Editors of *Ideas*, 1987 Yale Station, New Haven, Connecticut.

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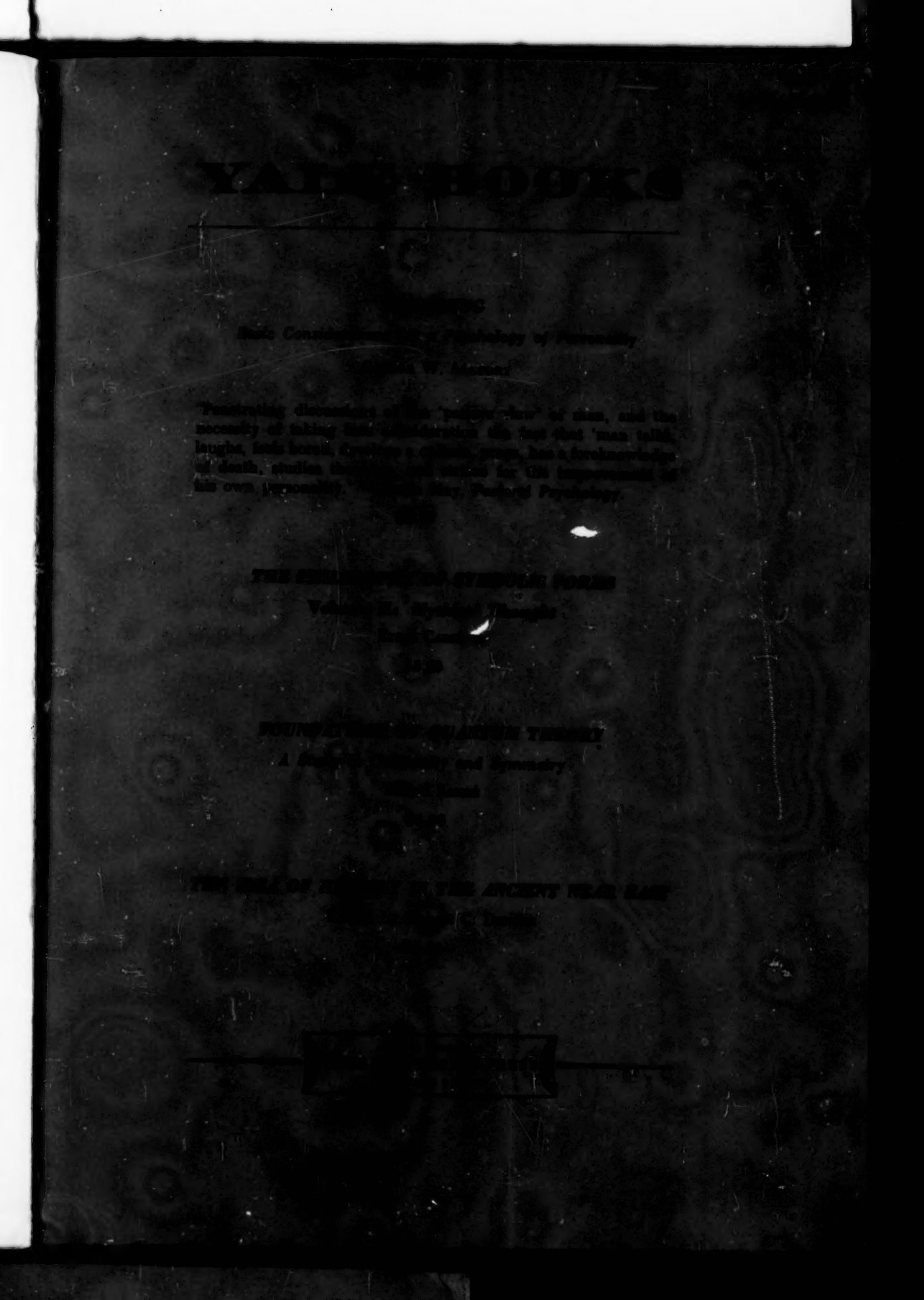
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